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REPORT

OF A

COMMITTEE

APPOINTED TO INQUIRE INTO THE QUESTION

OF THE

SUPERSESSION OF COLONELS OF HER MAJESTY'S BRITISH ARMY

BY THE

COLONELS OF HER MAJESTY'S INDIAN FORCES;

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WITH

MINUTES OF EVIDENCE

AND

APPENDIX.

Presented to both Houses of Parliament by Command of Her Majesty.

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INSTRUCTIONS

For the Committee appointed to consider the question of the Sup . session of Colonels of Her Majesty's British Army by those of Her Majesty's Indian Forces.

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1. The Committee will enquire into the effect of the existing Regulations on the present and future relative position of the Colonels of the two Services.

2. If the Committee should be of opinion that these Regulations operate unjustly or unequally on the interest of Officers of either Establishment, they will report what alteration should be made in them, having regard to the Parliamentary Guarantee given to Officers of the Indian Establishment by the Acts of 1858 and 1860.

3. The Committee will limit their Recommendations to courses which shall not involve increased charges upon either Imperial or Indian Revenues.

War Office,
3rd August, 1869.

The Vice-Chancellor, Sir William Milbourne James, *President*.

General Sir C. Yorke, G.C.B.
Lieut.-General Sir D. A. Cameron, K.C.B.
Lieut.-General R. Alexander
Lieut.-General H. Hancock
} *Members*.

REPORT.

TO THE RIGHT HONOURABLE, THE SECRETARY OF STATE FOR WAR.

1. We have carefully considered the matters referred to us by your Instructions of the 3rd day of August, 1869, a copy of which is prefixed to this Report; and we have now to submit the views which we entertain, and the conclusions we have arrived at in regard to them. In doing this we have had the great advantage of having the case of the English Army stated and supported by Major-General Sir Percy Herbert, K.C.B., and by Colonel Adye, R.A.; and of having that case commented on and examined by Major-General Balfour, R.A., formerly of the Indian Army. Appendix A, *Evidence.*

2. It is matter of familiar history that up to a comparatively very recent period the Indian Army was entirely distinct and separate from the Royal Army.

3. It was subject in the last resort, like all other bodies and persons in all Her Majesty's dominions, to the supreme power of the Crown and Legislature of this Realm.

4. But, subject to this, it was essentially the Army of the East India Company.

5. Its ranks and grades were essentially local; and an officer in the East India Company's Service was without real military rank, precedence or position, except within the limits of the Charter of that Body.

6. For reasons of high State policy, as well as for military reasons, it was considered essential that there should be a large European Force in the East Indies; that such Force should not be composed merely of Europeans enlisted for the East India Company and for local Indian service, but that it should comprise also a large element of the purely Royal Army. The British Army was therefore called upon to furnish for Indian service, as an Auxiliary Force, a large Contingent; and the nature and duration of the foreign service, which was thus enforced in rotation on the British Regiments, bore heavily, as it continues to bear heavily, on that Army. There being the two Armies in India, serving together under circumstances which required a body of the one and a body of the other to be in the same brigade or garrison, or other Command, questions of precedency and relative rank, and of right to command, could not but arise, and they did frequently arise between the two Armies.

7. The Regulations for the promotions of the Lieutenant-Colonels and Colonels of the Royal and East India Company's Armies previous to the introduction of the new rules for promotion in 1854, are correctly stated in the Report of the Committee, of which Colonel Egerton was the President, in January last; and the arrangements made at different times to prevent the supersession of the Lieutenant-Colonels of either Army in consequence of the Lieutenant-Colonels of the Indian being occasionally promoted to the rank of Colonel by the Regimental Line step before they became entitled to it by the Royal Brevets are also therein explained. It may be sufficient, therefore, for us to state that, as at that time the East Indian Officers held no rank except as above stated, the supersession of the Lieutenant-Colonels and Colonels of the one Army by the other was sufficiently guarded against by these arrangements, and no inconvenience had for several years been felt from their operation. Appendix D.

8. The promotions up to the rank of Lieutenant-Colonel in the Royal, and of Major in the Indian Army being regimental were very unequal in different Corps, but it was the object of every Regulation on the subject of promotion for both Services to prevent the supersession of any Officer after he had attained the rank of Lieutenant-Colonel.

9. It seems to have been from the first a point of jealous military honour on the part of both Armies that no officer of the higher ranks of either should be superseded by, so as to be placed under the command of, a junior Officer, obtaining promotion by the rules of his own Army: The authority of the Duke of Wellington, and afterwards of Lord Hill, is cited in support of this as a legitimate pretension of the Royal Officers, and it has repeatedly received the sanction of the Military Authorities at home. Appendix D.

10. In the year 1837, there occurred a very striking illustration of the extent to which this feeling was carried, was allowed to operate, and was respected and acted on. There was in the Indian Army a very extensive promotion by which several Officers obtained steps, without any corresponding promotion in the Royal Army. The then Commander-in-Chief in India thereupon, in conformity with the principles enunciated by the Duke of Wellington and Lord Hill, but without any communication with the Local or Home Government of India, issued a General Order, giving the Local Rank of Major-General in each Presidency to British Officers serving in such Presidency, so as to restore and maintain their

relative military position towards, and precedence over, the Officers of the Indian Army, with whom they were serving, or might in the ordinary course of military duty be called on to serve. These are known in Army history in India as the "Fane Brevets"

11. There was a slight expression of regret that this should have been done without previous communication with the Authorities in India; but the local promotions were allowed to remain undisturbed, and the system was continued down to the year 1854. In 1854 the two Armies were still thus separate and distinct: the one the Imperial Army of the Sovereign; the other the Local Army of the East India Company. That year is a memorable epoch in the history of both Armies. The Royal Army, from causes peculiar to itself, and with which the Indian Army had nothing to do, had all its channels of promotion so choked up that the average age of the Colonels promoted to be Major-Generals in 1851 was 60, a state of things felt to be fraught with great mischief to the public service, and to be a real grievance to the Officers whose chances of rise in their profession were so delayed. Promotion, too, except the ordinary Regimental promotion, came by fitful and uncertain Brevets of an extent determined by no positive rule; and an Officer who just missed by one having a step in the Brevet of 1846 had to wait five weary years for the Brevet of 1851, a very considerable portion of the remaining life of a veteran. A Royal Commission of the highest political and military authority was appointed to consider the whole subject; and upon their recommendations embodied in a Report, carefully elaborated and exhaustive, a very comprehensive series of measures was, in the year 1854, adopted with a view to remedy the evils felt, and to remove the grievances complained of. Additional retirements on full pay were granted at the time and provided for prospectively, with a view to accelerate promotion; and it was also provided that Army promotion, instead of being by occasional or periodical Brevets, should be continuous and certain,—there being a fixed Establishment of General Officers, each vacancy in which, as a general rule (and subject to some special provisions, as to supernumerary General Officers), should be filled up by the advancement of the Senior Colonel on the List.

The Right Hon. Sidney Herbert.
Viscount Hardinge.
Earl Cathcart.
Earl Grey.
Lord Panmure.
Lord Seaton.
Sir John S. Pakington.
The Right Hon. Edward Ellice.
Sir John F. Burgoyne.
Sir Hew D. Ross.
Colonel Knollys.

12. But in recommending and establishing this System, the Commissioners took into very careful consideration the peculiar circumstances of the Non-purchase or Seniority Corps, viz., the Royal Artillery and Royal Engineers, and came to the conclusion (which was adopted and acted on) that there should be distinct and separate Lists of General Officers for them, and that additional pecuniary inducements should be given to the Senior Officers to retire. It was felt that from the comparative slowness of promotion in those Corps, and the comparatively advanced age at which in them Officers attained the position of Lieutenant-Colonel, some such special measures and provisions were needed to meet the peculiarity of their case and to maintain the efficiency of the Service.

13. The number of General Officers for the General List was fixed at 234, viz., 134 Colonels of Regiments and 100 General Officers on Unattached pay; while, "guided by the analogy of the Army, and the relative numbers of the Officers in the Ordnance Corps," 24 General Officers were assigned separately for the Artillery and 12 for the Engineers.

14. A very important change was also made in the mode by which Lieutenant-Colonels were advanced to the rank of Colonel. That advancement had, up to that time, been given according to the strict rule of Seniority, without reference to services performed, except in the case of Officers who became full Colonels by virtue of their appointment as Aides-de-Camp to the Sovereign. This practice was, after most careful consideration by the Commission, altered, and it was provided that such promotion (except where given as a reward for very distinguished conduct, or by virtue of the appointment as Royal Aide-de-Camp) should thenceforth be given by service alone, that is, should be given to all Officers on their completing three years of service with the rank of Lieutenant-Colonel in the command of a Regiment, or as the Field Officers and Senior Captains and Lieutenant-Colonels of Battalions of the Guards, termed "mounted Officers," or as Lieutenant-Colonels on the Staff in situations necessarily held by Officers of that rank, or as Field Officers of the Artillery or Engineers. In some special cases six years' service was required. The Commissioners, however, recommended, out of regard to existing vested interests, that this Regulation should not apply to the then existing Lieutenant-Colonels or Majors, and that there should be, moreover, a General Brevet before any of their suggestions were adopted. There was, accordingly, a very extensive General Brevet in that year.

15. Neither the Commission in recommending, nor the Government in adopting, this great scheme of reform, appear to have taken into consideration anything relating to the Indian Army, nor to have been guided at all in the extent and manner of promotions provided for the Royal Army by any reference to the relative position which might thereafter be occupied by the Officers of the Royal and the Officers of the Indian Army.

16. Contemporaneously with this new system of advancement and promotion granted

to the Royal Army, one similar, based on substantially the same principles, was introduced into the Indian Army.

17. In 1855, the number of General Officers for the Indian Army was fixed at 220, and continuous promotion of Colonels by seniority to the vacancies in the Generals' List was provided for.

18. The new System as to the promotion of Lieutenant-Colonels to Colonels was also adopted for the Indian Army, making it depend not on seniority but on qualifying service,—either Regimental or in certain Staff appointments.

19. It appears by the Report of the Royal Commissioners, 17th June, 1854, on which the Warrant of October 1854 was founded, that the number of General Officers for the Guards, Cavalry, and Infantry of the British Army was determined by the number of General Officers on the List on the 30th April of that year, and for the Ordnance Corps by the relative numbers of the Officers of those Corps to those of the Guards and Line; but it is to be observed that between the 30th April and the issue of the Warrant in October, the large Brevet of 20th June, 1854, had been granted, which so greatly increased the number of Generals above that which was on the List on the 30th April, that it was not till June 1857, that the excess was absorbed by the promotion of one Colonel after every third vacancy. In the Indian Army, on the contrary, the number of General Officers being far below the new fixed Establishment, 95 Colonels were promoted to complete it, and the promotions were carried down to February 1854, or seven years in advance of the Colonels of the Line Army.

20. The number of 220 is so nearly in the same proportion to the number of Combatant Officers in the Indian Army, as that which the number of Generals in the Royal Army bore to that of the Full-pay Officers in that Army, that there can be little doubt that it was fixed with reference to the scale adopted in the English Army.

21. Although the number of Generals allotted to the two Armies was substantially similar and equal, there was a great disparity as between the different grades of General Officers; for while in the British Army there were 59 Generals and 85 Lieutenant-Generals to 138 Major-Generals, there were allotted to the Indian Army 145 of the lower grade, but only 50 Lieutenant-Generals and 25 Generals.

22. The following official Memorandum was published in the "London Gazette" of May 1, 1855:—

"MEMORANDUM.

"*Horse Guards, April 25th*, 1855.

"IN order to remove any doubt which may exist as to the rank and precedence of the Officers of "the Honourable East India Company's Service, it is Her Majesty's Pleasure that officers of the "Honourable East India Company's Service, whose commissions shall be signed by Authorities duly "deputed to do so by Her Majesty, shall have rank and precedence with officers of Her Majesty's "Regular Army according to the dates of their Commissions, in all parts of Her Majesty's Dominions "or elsewhere."

23. The Scheme adopted as to the Royal Army in 1854 did not in all respects prove satisfactory, and a new Commission was accordingly appointed in 1858. Upon their report a considerable addition was made to the number of General Officers assigned to the Line, which was increased from 234 to 260, the Commissioners stating that by reason of the great increase in the number of Officers in the Army since the War with Russia, the existing Establishment was not, in their opinion, sufficient to afford to those Officers a sufficiently early prospect of rising to the rank of Major-General, with the advantages belonging to it.

The Right Hon. Sidney Herbert.
His Royal Highness the Duke of Cambridge.
The Duke of Newcastle.
Earl Grey.
Lord Panmure.
Lord Rokeby.
The Right Hon. Edward Ellice.
The Hon. Sir J. Yorke Scarlett.
Sir W. F. Williams.
Sir J. M. F. Smith.
Sir Henry K. Storks.
Colonel Eyre.

The following Table appears in their Report, page 14, showing the number of Non-commissioned Officers and Men voted, the number of Officers on full-pay, and the number of General Officers in various years from 1816 to 1858:—

Year.	No. of Non-commissioned Officers and Men voted.	No. of Officers on Full-Pay exclusive of Colonels of Regiments.	No. of General Officers being Colonels of Regiments, and No. in receipt of Unattached Pay, excluding asterisk General Officers.
1816	182,625	13,191	580
1829	103,527	5,915	434
1835	95,513	5,478	379
1843	123,717	5,764	333
Jan. 1854	137,045	5,585	239
Nov. 1854			274
1858	194,498	8,447	234

24. But that which was most complained of was the Regulation by which a Lieutenant-Colonel commanding a Battalion, or holding certain equivalent situations on the Staff for three years, unless shown to be unfit, became *ipso facto* a full Colonel.

25. This complaint is discussed very fully in the Report, and in the result the Commissioners came to the conclusion that, in making the changes in 1854, the vested interests of the existing junior Lieutenant-Colonels had not been sufficiently protected; and they recommended (and the recommendation was adopted) that as many as 115 Lieutenant-Colonels who had been passed over should at once receive rank as Colonels, and have their commissions antedated so as to place them above as many as 206 Colonels, their juniors, who had in the meantime been promoted under the Regulations of 1854.

26. But in remedying the grievance to individuals, admitted by them, the Commissioners of 1858 gave their clear and emphatic approbation of the principle of the measure of 1854.

27. They say as follows in the 31st paragraph of their Report :—

"It must be recollected, however, that the Commission of 1854 had to deal with a very serious "evil. There can be no doubt that a system by which those who served and those who did not, "advanced 'pari passu' to the head of their profession was essentially unjust both to the individuals "and to the Service. Under this system zealous officers who clung to their profession, and who "acquired experience and knowledge of their duties by commanding battalions, or by service in "equivalent situations on the Staff, had no advantage over others who never commanded more than a "company, or had served little, if at all, since they did so, and never as a Lieutenant-Colonel; on the "contrary, both were alike promoted to the rank of Colonel and Major-General, and became alike "eligible for responsible command, and alike recipients of the honour and advantage of the rank. It "is true no doubt that in many cases the want of experience was not the fault of the officer, who "would gladly have served had the opportunity been afforded him; but the claims of no profession "can be equalized, and good and ill fortune as to their opportunities must attend all men in all possible "careers. The public service requires that the experience should have been acquired; many never "seek to acquire it, but at any rate the experience cannot be dispensed with because some who seek "it are so unfortunate as not to obtain it."

28. The Commissioners o 1858 also, for the future, fixed five years instead of three as the qualifying period, and eight years in those cases in which six years had been previously required.

29. It is important to observe that in the Indian Army, there being no half-pay, the number on which the Establishment of General Officers was calculated included all the Officers of that Service who had to be provided for by that Establishment; but in the British Army there is a long list of Officers on Half-pay who are entitled to rise to the rank of General Officers. Many of these Officers have been placed on Half-pay by reductions in the Army at different times, and from the Half-pay List the Field Officers for the Staff of the Army are now taken. In the 8,447 officers upon which the Establishment for General Officers was calculated in 1858, none of those on Half-pay appear to be included, as it is stated in the heading of the column that the number is of Officers on Full-pay, exclusive of Colonels of Regiments. This Establishment therefore provides only 1 General for every 32 Full-pay Officers, and allows nothing for the Half-pay.

30. With regard to the Indian Army, again the example of the Authorities at the Horse Guards was followed, and the Regulations were modified and corrected by Royal Warrant of 1859.

31. Then there occurred the great Mutiny in India, which led to the resumption by the Crown of the Government which had been delegated to the East India Company.

32. By the Act of 1858, which provided for that resumption, it was enacted in the 56th Section :—

"LVI. The Military and Naval Forces of the *East India* Company shall be deemed to be the *Indian* "Military and Naval Forces of Her Majesty, and shall be under the same obligations to serve Her "Majesty as they would have been under to serve the said Company, and shall be liable to serve "within the same territorial limits only, for the same terms only, and be entitled to the like Pay, "Pensions, Allowances, and Privileges, and the like advantages as regards Promotion and otherwise, as "if they had continued in the service of the said Company."

33. By this Act the then existing Indian Forces became part of the Royal Army, but still with a distinct organization.

34. It is not necessary to state in detail the well-known facts, consequent on the Mutiny, of the disappearance of half the Native Army, and of so large a proportion of the European soldiers who had been enlisted for the service of the Company, and declined to be transferred to the service of the Crown.

35. A reorganization of the Indian Army became necessary, and as such reorganization made the number of Officers in the Indian Army far in excess of the future requirements of the Service, the Indian Authorities held out large pecuniary and other inducements to their Officers to retire altogether from the Service, and those inducements were so far successful, that as many as 134 Lieutenant-Colonels, 98 Majors, and 77 Captains, accepted the Government offers and retired.

36. It was then thought that the British Army and the European portion of the Indian Army might be amalgamated into one, Cavalry and Infantry with Cavalry and Infantry, Artillery with Artillery, Engineers with Engineers, with the same rules and scale and chances of promotion. Royal Warrants were issued for this purpose. The Officers of the Indian Army, however, complained in many respects of what was done in the way of reorganization and amalgamation, as being in violation of the Parliamentary Guarantee contained in the 56th Section of the Indian Government Act, and those complaints were referred to a Commission, which is commonly known as Lord Cranworth's Commission. That Commission held some of the most important of the complaints of the Indian Army to be well-founded, and they came to the conclusion that the arrangement then made for the amalgamation of the Colonels and General Officers of the two Services in one List for promotion would, if carried out, be a violation of the Guarantee.

Lord Cranworth.
Earl of Ellenborough.
Lord Hotham.
The Right Hon. J. W. Henley.
Sir Charles Yorke.
Major-General Clarke.
Sir Peter M. Melvill.

37. The decision of Lord Cranworth's Commission, and the acquiescence of the Government in that decision, rendered it necessary to recast almost altogether the plans for the reorganization of the Indian Army, and for the amalgamation of the two services; and the result has been a system of singular complication.

38. We think it right to state somewhat in detail what was done.

39. In the year 1862 three Regiments of Cavalry and nine of Infantry were transferred from the Indian to the British Army, and 12 General Officers were taken from the Indian and added to the British Establishment. The Establishment of General Officers for the two Armies became then: British, 272; Indian, 208.

40. On the reorganization of the Indian Army after the Mutiny, it was decided that there hould, as in the British Army, be a distinct Establishment of General Officers for the Ordnance Corps; the Establishment for the Artillery was fixed at 26, and that for the Engineers at 12; total 38. Promotions, however, of the Colonels of those Corps were to be made on the General Indian List of General Officers till all who had obtained the rank of Colonel previous to the 18th February, 1861, had become General Officers. Then the whole of the General Officers of Artillery and Engineers were to be removed from the Indian List of the three Presidencies, and three distinct Establishments were to be formed, the Indian List of General Officers being then reduced by 35, that being the number stated in the Royal Warrant of 15th June, 1864, to have been borne upon it on account of the Ordnance Corps. This arrangement was completed in the year 1868, and the Establishment of General Officers for the Indian Army is accordingly now 173.

41. In carrying out this arrangement, however, it appears that at the time of the transfer there were 34 General Officers of the Artillery removed from the Indian List of General Officers and 10 of the Engineers; two were therefore required to complete the Establishment of the latter Corps, and two Engineer Colonels were accordingly promoted, and thereupon removed from the General Indian List. In consequence therefore of these transfers 46 General Officers have been removed from the General Indian List, while in conformity with the Warrant it has only been reduced in number by 35. The arrangement thus caused 11 vacancies on the List,—viz., two by the promotion of two Colonels of Engineers to complete the Establishment of General Officers of that Corps, and nine more by the removal of the excess of Artillery Officers. These vacancies have been filled by the promotion of that number of Colonels of the Indian Staff Corps and of the Indian Cavalry and Infantry, being, in fact, extra promotions, and one more than the total number of Colonels promoted on the British List for eleven months of the present year.

42. It may here be observed that in the Royal Warrant of the 1st January, 1862, it was provided, that on the transfer of the General Officers of Artillery and Engineers of the Indian Army to distinct Establishments, an addition of three General Officers should be made to the Unattached List of the British Army, the number of 12 that were transferred with the 12 European Regiments of Cavalry and Infantry being less than the proportion (15) of General Officers due to the number of Combatant Officers belonging to the transferred Regiments. This proviso was not otherwise noticed in the subsequent Warrant of 15th June, 1864, than by excepting the Clauses 9 and 10 of the former Warrant,—the first of which provided for the addition of the three General Officers to the British Army,—from the clauses which were cancelled by the Royal Warrant of 15th June, 1864. We presume, therefore, that there will be no objection to this addition to the Establishment of the British Army, though it has not yet been made. The Establishments of Generals of the two Armies will then be, exclusive of the Ordnance Corps of each,—British, 275; Indian, 173.

43. The Regulations under which promotions up to the rank of Colonel are now made in the Indian Army are as follows:—

44. On its reorganization after the Mutiny, a Staff Corps was formed, and Regulations for the promotion of the Officers in the several ranks of the Corps were established, which were

complained of by the Officers of the other Branches of the Army as causing a most extensive supersession of them by their juniors in the Staff Corps.

45. These complaints having been considered to be well-founded, by Lord Cranworth's Commission, it was determined, with a view to remove all grounds of complaint on this head, to establish a System of promotion conferring Brevet rank by length of service on all Officers of the several Staff Corps of the three Presidencies, and of the Indian Army generally. In the first place, therefore, in order to restore all Officers of the Indian Army who had been superseded to their relative position as regards the Staff Corps Officers, it was determined that all Officers whose Commissions bore date on or prior to the 18th February, 1849, were to be promoted to the rank of Captain by Brevet.

Appendix O.

46. Officers whose first Commissions bore date on or prior to 18th February, 1841, to be promoted to the rank of Major by Brevet.

47. Officers whose first Commissions bore date on or prior to the 18th February, 1835, to be promoted to the rank of Lieutenant-Colonel by Brevet.

48. All such promotions to bear date 18th February, 1861.

49. After the 18th February, 1861, Officers of the several Staff Corps and of Her Majesty's Indian Army generally, were granted Brevet rank under the following Regulations :—

50. Officers after 12 years' standing in the Army from date of first Commission, to be Captains ; after 20 years, Majors ; after 26 years, Lieutenant-Colonels.

51. On and after the 18th February, 1866, all Officers who have served 31 years in all, five of which shall have been in the grade of Lieutenant-Colonel, to be promoted to the rank of Colonel by Brevet.

52. The above system of promotion to Brevet rank is to cease in its application to the several grades of the Army on the extinction of those grades among the Officers of the Indian Army. Thus, when the whole of the Lieutenants of the Indian Army shall have been promoted to the rank of Captain, the promotion of Officers in the Staff Corps to the Brevet rank of Captain under the above rule will be discontinued.

53. In consequence of the above rules, similar *local* rank has been conferred in India upon the Officers of the British Army serving there, after the same periods of service and under the same rules.

54. With reference to the bearing of these Regulations on the British Army, it must be observed that it has been ruled that the promotion of Officers of the Indian Army is to be considered Army rank, entitling the Officer receiving it to share in the advantages of promotion under the former system of Brevet promotion, and to promotion in succession to casualties amongst General Officers.

55. This makes a great difference between the Officers of the Indian Service and those of the British. It makes their Brevet rank *effective*, while that given to the British Officer is only *local*, and confined to India. Moreover in the Indian Army the rank of Colonel is obtainable by mere length of service, although the Officer may never have served at all in any of the appointments, an actual service in which, for certain periods, was required— by the 8th Clause of the former Promotion Warrant for the Indian Army, dated January 1859,—to qualify a Lieutenant-Colonel for the rank of Colonel.

56. A Lieutenant-Colonel of the British Army cannot be promoted to the rank of Colonel except after an actual service of five or eight years in one of the situations therein specified, and if before he has completed the period thus required he should be placed on half-pay, either by Regimental reduction or by his appointment on the Staff being discontinued, he is not allowed to reckon the time thus passed on half-pay ; and the time required to complete his period of qualifying service is only computed from the date when the Commander-in-Chief may be enabled to place him in another qualifying appointment.

Royal Warrant, 1st Jan., 1862.

57. The arrangements that in the first instance were made on the reorganization of the Indian Army, for the amalgamation of the General and Field Officers of that Service with the General and Field Officers of the Regular Army, were as follow :—

58. The existing General Officers of either Army were to be continued on separate Lists.

59. All Colonels of either Army who attained that rank on or prior to 17th February, 1861, were to be continued on separate Lists, and to succeed on separate Lists to the rank of General Officer ; but if all on one of those Lists should have become Major-Generals, while some on the other were unpromoted, these Colonels should have the benefit of vacancies occurring in the List of Generals of either Army. Colonels so promoted were to be placed on an amalgamated List of Major-Generals, from which promotions were to be made by seniority in succession to all vacancies in the higher grades, whether of the British or Indian Service.

60. Colonels in either Army who had attained that rank after the 17th February, 1861, were to be placed according to the dates of their Commission as Colonels, on one general List, from which, so soon as the separate Lists of Colonels were exhausted, promotion was to be made

in succession to all vacancies in the Establishment of General Officers on the amalgamated List above-mentioned.

61. This Warrant was cancelled on the Report of Lord Cranworth's Commission, and the Royal Warrant of 15th June, 1864, was issued by which promotions to the rank of General in both Services are now governed.

62. The Regulations as respect the promotions in the Ordnance Corps having been already explained, it is only necessary to state those which affect the Officers of Cavalry and Infantry, which are as follow:—

63. The Officers of Cavalry and Infantry of Her Majesty's Indian Army are to remain on the Indian General List, and to rise on that List to the rank of General Officer.

64. Officers of the several Indian Staff Corps who had attained the rank of *Lieutenant-Colonel* prior to 18th February, 1861, are to be promoted under Indian Regulations to the rank of Major-General on the Indian List. Those who had not attained the rank of Lieutenant-Colonel previous to the 18th February, 1861, as they respectively attain the rank of Colonel, are to be placed according to the dates of their Commissions on the general List of Colonels of the British Army, and to rise on that List according to seniority to the rank of General Officer. It is then provided that whenever a Colonel of the Staff Corps, whose name is borne on this amalgamated List, would, if he had remained on the List of Colonels of the Indian Army, have attained the rank of Major-General, an addition of one shall be made to the British Establishment of General Officers by the promotion of the Senior Colonel on the amalgamated List, whether he be a British Officer or one brought in from the Staff Corps. This is to be continued until the number of General Officers added to the British Establishment, including the first transfer, be one for every 28 Combatant Officers of the three Staff Corps. Appendix P.

65. When the first addition is thus made to the British Establishment, all the General Officers of the Staff Corps on the Indian General List are to be transferred to the British Establishment, which will thus be increased by that number, and the Indian Establishment diminished. Promotion to the General Indian List will then be limited to Officers of Cavalry and Infantry of that Army who shall not have joined the Staff Corps.

66. It has already been stated that whatever might be the inequality of promotion in either Service up to the rank of Lieutenant-Colonel, it was, before the abolition of periodical Brevets in 1854, the object of every Regulation on the subject of promotion, for both Armies, that after attaining that rank, the advance to the rank of Colonel and then to Major-General should proceed *pari passu*, and that no Lieutenant-Colonel or Colonel should be superseded by another, whether of his own or the other Service. All were to advance to the higher rank by Seniority according to the dates of their Commissions. When in the year 1854 an alteration was made in respect to the rise of a Lieutenant-Colonel to the rank of Colonel, and a certain qualifying period of service, either in command of a Regiment or on the Staff, was required to entitle a Lieutenant-Colonel, of either Army, to the promotion of Colonel, the latter rank became of course the starting point from which all subsequent promotion in the several Branches of both Armies should proceed by Seniority.

67. It could not of course be expected, with whatever care the Establishments of General Officers for each Army were fixed, that under the new System some cases would not occur of the Colonels of one Army becoming Major-Generals before their Seniors in the other Army; but it was doubtless anticipated that the instances would be few, and that the occurrence of casualties from time to time would re-adjust such cases.

68. But the promotion of the Colonels of the Indian Army was so greatly accelerated by the promotion of so large a number to complete the fixed Establishment in 1854, and has since been so far more rapid than in the British Army, that it has at length arrived at such a point, that the last Colonel of the Indian Army promoted to be a Major-General was junior to 194 Colonels of the Cavalry and Infantry of the British Army, all of whom are eligible for promotion in their turns, and several of whom were distinguished at the head of Her Majesty's Regiments in the Russian War and in the Indian Mutiny. The special Retirements granted in the year 1861, of which 134 Lieutenant-Colonels availed themselves, have also now brought so many Colonels of short service in that rank to the head of the List, that the future promotions to the rank of Major-General will be even more marked in their supersessions of Senior Colonels of the British Army than has hitherto been the case.

69. It is to be noted, however, that Supersessions have occurred on the other side. The following are the Supersessions of Lieutenant-Generals of the Indian Army who have been superseded by junior Lieutenant-Generals of the British Army, and of Major-Generals of the Indian Army who have been superseded by junior Major-Generals of the British Army, since 28th November, 1854:—

1 British General superseded 3 Indian Lieutenant-Generals; 9 superseded 4; 3, 5; 3, 6; 1, 7; 1, 8; 2, 9; 1, 11; 1, 12; 1, 14; and 2, 19.

2 British Lieutenant-Generals superseded 6 Indian Major-Generals; 1 superseded 7; 1, 9; 1, 12; 1, 14; 1, 23; 1, 24; 5, 26; 4, 27; 3, 28; 7, 29; 8, 30; 5, 31; 7, 33; 1, 34; 3, 36; 2, 38; 4, 39; 4, 40; 1, 41; 5, 42; 7, 43; 6, 45; 4, 46; 2, 47; 5, 48; 3, 49; 2, 50; 1, 52; 1, 53; 1, 55; 1, 58; 1, 59; 2, 62; 1, 65; 1, 70; 1, 75; 1, 79; 1, 82; 1, 87; 1, 97.

On the other hand, 1 Indian General superseded 2 British Lieutenant-Generals, and 1 superseded 1.

Appendix M. In the Appendix will be found a List of the Officers thus superseded.

Appendix K. 70. It is stated in Major-General Pears' Memorandum of 9th July, 1869, that not above one-fourth of the British Colonels superseded are Officers of the Line on Full-pay, and that only a portion of these will be found in India.

It has been pressed upon us that there are no Unattached or Half-pay Officers in the Indian Army; inasmuch as when the Indian Officers retire they are out of the Service altogether. But we are unable to make any distinction in this respect between the British Officers on Half-pay and the Officers of the Indian Army who are engaged on Civil Services in India, and are now out of active employment by reason of the reduction of the Native Forces.

71. It may be remarked that the Supersession after the rank of Colonel, is a very different matter from some Officers in the junior grades obtaining promotion more rapidly than others. These last can rarely find themselves in situations where important questions of command can arise, but Colonels are placed in such positions. The Supersession is therefore very severely felt by such an officer, when several far junior to himself as Colonels are promoted over him, not in consequence of any distinguished service,—a case which would never be complained of,—but in consequence of the greater rapidity of promotion in the superior ranks of the Army to which those who have passed over him belong.

72. The result of such an inequality, as now exists, in the promotion of the Colonels of the two Armies serving together, and the feeling it cannot but excite, may in some degree be appreciated by the fact that there are some General Officers of the Indian Service, who were actually serving under the command of Colonels of the British Army during the Mutiny, over whom they have since been promoted.

73. There are now seven distinct Bodies, having seven distinct Lines of promotion, and seven distinct Lists of Generals, the advancements to the rank of General in each List being assigned to the Senior Colonel in that List, viz.:—

The Guards, and Cavalry and Infantry of the Line..	275	General Officers.
The Royal Artillery	32	„
The Royal Engineers	16	„
The Royal Artillery (late Indian)	26	„
The Royal Engineers (late Indian)	12	„
The Royal Marines	13	„
The Indian Army	173	„
Total	547	„

74. There being thus seven distinct Lines, it cannot but happen that to some extent inequality of promotion should result, and such inequality must have been foreseen.

75. The Officers of the British Army, however, complain that this inequality has become so great and so glaring, as between English Colonels and those of the Indian Corps, that they are superseded in so wholesale a manner by men much their juniors (juniors, that is to say militarily speaking) as to constitute a great and substantial grievance. The fact is unquestionable that promotion from Colonel to General has been for some time past, and is now, and, at all events for some years to come, is likely to be, much more rapid in the Indian Army than in the British.

76. It has been contended before us with great ability that this is in itself, on the mere statement of the fact, a proof of injustice done to the British Army which could not have occurred under the former System of periodical Brevets.

Vide Evidence of Sir Percy Herbert. Appendix A. 77. For that System, therefore, preference was expressed in the Evidence before us, but in truth that matter must be considered as conclusively settled by the Reports of the Commissions of 1854 and 1858, and by what was done in those years.

We certainly are not disposed to recommend anything which would open the questions then settled; and we entirely concur in the emphatic approbation of the principle of the measure of 1854 expressed by the Commissioners of 1858, and quoted in Paragraph 27 of this Report.

78. As between the British and Indian Armies, moreover, it would be impossible to act on the theory that abstract justice between them requires the point of Lieutenant-Colonel to be taken as the point of comparison; not only by reason of the one being in all its grades strictly

a Seniority Service, but also from the fact that the grade of Lieutenant-Colonel itself in India was not obtained as a regimental promotion, but out of a large general List.

79. The theory pressed on us as to the essential difference between the rise to Lieutenant-Colonel and the subsequent rise, overlooks the fact that all Brevet promotion was essentially an Army and not a Regimental promotion; that a Captain of a Regiment of the Line or Ordnance Corps, or a Lieutenant and Captain in the Guards, might be a Brevet Lieutenant-Colonel, while his Senior in the Regiment was not.

80. There is, however, we think, much more force in another view of the case which has been presented to us, viz.—that irrespectively of any question of vested right or of faith pledged towards any particular part of the Service, there is a broad sense of equality and justice which requires that all Arms and all portions of the Army should have substantially their equal share of the promotions, the honours and emoluments of the profession; and that there is a military susceptibility which is naturally and justly wounded, when a Senior is put under the command of a Junior who has been under him.

81. It is material to bear in mind what is the true meaning of the word Supersession, which has been so much dwelt on. A Captain cannot be said to be superseded when, by the different chances of promotion, he remains a Captain, while a Captain of another regiment, junior to him, becomes a Major. Nor can an English Lieutenant-Colonel in the Line be properly said to be superseded by a Junior Lieutenant-Colonel in the Artillery becoming a Colonel before him. A British Colonel cannot be said to be superseded because an Indian Colonel, his junior, obtains by the rules and chances of his service a vacant Major-Generalship on the Indian Establishment, which could never by any chance have fallen to the former. It may be a piece of great good luck, like anything else which may occur to a man in the chances and vicissitudes of military life; and all that could reasonably be required of a Government is, that it should, as far as may be, with due regard to vested interests, take care that its general Regulations should substantially, and on the whole, equalize the chances of obtaining such pieces of luck between all Branches of the Service.

82. But the fact that the two Armies do serve and must serve together in very large numbers (the European Forces in India being now in round numbers 60,000 men), and the fact that there is the Official Memorandum of 1855 giving equal precedence and rank, and consequent right to command, to the Officers of the two Armies, do make the unequal promotion in the two Armies amount to what military men do really and naturally regard as supersession. The extent to which, and the circumstances under which this has taken place, are therefore the matters which we have to inquire into, to determine whether they are of such a nature as to call for a change in the existing Regulations, and whether there is any vested interest which precludes the making of such a change.

83. It will be well to dispose of the last point first. The vested interest, so far as any exists, arises from the conjoint operation of the Guarantee in the 56th section of the Act of Parliament, and of the Official Memorandum giving equality of rank.

84. Now, we are of opinion that there is nothing in the Parliamentary Guarantee which in any way extends to the Right of equal precedence and rank conferred by the Memorandum of 1855. The Guarantee is expressly confined to those Rights which would have belonged to the Indian Army, if the Company had still continued to exist, and if the Officers had still continued in the Military Service of that Company. If the Company were now existing, there would be nothing whatever to prevent the Crown from recalling or modifying that Order. If (the two armies continuing separate) the Crown had found that the working of the Indian System of promotion was substantially different from what was anticipated, and especially if it had become so from administrative measures not in contemplation at the time, and so that the rank of Colonel or Major-General in the Indian Army represented something, in length of service, very different from the same grades in the English Army, there was nothing in the Guarantee to prevent the Crown from dealing, prospectively, according to what it should think fair and right in respect of the relative position of the same nominal grades in the two Armies. It might have restored the "Fane Brevets," or it might have doubled the amount and accelerated the pace of promotion in the British Army, without giving the slightest ground to the Indian Army to complain that the Parliamentary Guarantee had been violated. And if it were now to do the same thing, or anything substantially the same, the Indian Army, whatever other ground of complaint they might have, could not complain that the Parliamentary Guarantee had been violated. All that they can reasonably ask is, that the Crown, having succeeded to the East India Company as their master, and so to the immediate command of both Armies, should, as between the two, hold an equal hand, and, so far as regards relative rank and precedence, deal with them on exactly the same principles as it would deal under like circumstances with the Branches of the Royal Army.

85. It is of course essential to the well being and good feeling of an Army that such

an Order as the Order of 1855, should not be interfered with lightly, nor without very grave and substantial reasons. We have therefore to consider whether there are in this case such grave and substantial reasons.

pendix Q. 86. We have had before us a good deal of Evidence, and several Returns, showing the practical working of the Systems of Promotion in the two Armies, as affected by what has been done since 1855.

87. It will be sufficient to state the following results, taken from batches of twelve Major-Generals in each Army, at the different epochs of the important changes which have been made in the two Armies.

88. After the Order of 1855 was issued, the first 12 Major-Generals promoted to the fixed Establishment, exclusive of Officers of the Marines, and Officers retired on full-pay, held Commissions of the following dates :—

BRITISH ARMY.

	First Commission.	Lieut.-Colonel's Commission.	Colonel's Commission.
Cavalry	1809	1837	1851
Infantry	1805	"	"
"	1808	"	"
Guards	1821	"	"
Unattached	1821	"	"
Infantry	1806	"	"
"	1812	"	"
"	1824	"	"
"	1809	1838	"
Unattached	1810	"	"
"	1811	"	"
Infantry	1822	"	"

INDIAN ARMY.

First Commission.	Lieut.-Colonel's Commission.	Colonel's Commission.	First Commission.	Lieut.-Colonel's Commission.	Colonel's Commission.
1818	1843	1854	1808	1844	1854
1824	"	"	1807	"	"
1819	"	"	1808	"	"
1817	"	"	1814	"	"
1811	"	"	1820	"	"
1812	"	"	1821	"	"

The average length of service from the date of the first Commission being for the British Officers 43 years, for the Indian Officers 40½ years.

89. After the grant in 1858 of an increased Establishment of General Officers to the British Army, the dates stood thus :—

BRITISH ARMY.

	First Commission.	Lieut.-Colonel's Commission.	Colonel's Commission.
Royal Engineers	1809	1845	1854
Unattached	1817	1843	"
Royal Engineers	1809	1845	"
Cavalry	1821	1843	"
Infantry	1809	"	"
Royal Artillery	1807	1846	"
Guards	1828	1843	"
Infantry	1817	"	"
"	1825	"	"
Unattached	1815	"	"
Infantry	1811	"	"
"	1827	"	"

INDIAN ARMY.

First Commission.	Lieut.-Colonel's Commission.	Colonel's Commission.	First Commission.	Lieut.-Colonel's Commission.	Colonel's Commission.
1815	1846	1854	1808	1847	1854
1820	"	"	1812	"	"
1821	"	"	1821	"	"
1809	1847	"	1817	"	"
1820	"	"	1814	"	"
"	"	"	1820	"	"

The average length of service from the date of the first Commission being for the British Officer 42 years, and for the Indian Officers 42 years.

90. In 1862, after the Special Retirements granted to the Indian Army, the dates stood thus:—

BRITISH ARMY.

	First Commission.	Lieut.-Colonel's Commission.	Colonel's Commission.
Royal Engineers	1816	1853	1854
Infantry	1825	1847	"
Guards	1833	"	"
Infantry	1827	"	"
Cavalry	1830	"	"
"	1825	"	"
Infantry	"	"	"
Guards	1831	"	"
Infantry	1828	"	"
"	1825	1848	"
Guards	1834	"	"
Infantry	1835	"	"

INDIAN ARMY.

First Commission.	Lieut.-Colonel's Commission.	Colonel's Commission.	First Commission.	Lieut.-Colonel's Commission.	Colonel's Commission.
1820	1850	1854	1823	1851	1854
1819	"	"	1820	"	"
1820	"	"	1819	"	"
"	"	"	1814	"	"
1821	"	"	1819	"	"
1818	"	"	1821	"	"

The average length of service from the date of the first Commission being for the British Officers 34 years, and for the Indian Officers 42½ years.

91. In 1868–9, in the case of the last 12 Major-Generals promoted in each Army up to 8th May, 1869, the dates of their Commissions stood thus:—

BRITISH ARMY.

	First Commission.	Lieut.-Colonel's Commission.	Colonel's Commission.
Infantry	1834	1854	1854
Cavalry	1838	"	"
Unattached	1822	"	1855
Infantry	1834	"	"
"	1837	"	"
Guards	1841	"	"
Cavalry	1831	"	1857
Infantry	1829	"	"
Unattached	1833	"	"
Infantry	1829	"	"
Guards	1838	"	"
Infantry	1822	"	"

INDIAN ARMY.

First Commission.	Lieut.-Colonel's Commission.	Colonel's Commission.	First Commission.	Lieut.-Colonel's Commission.	Colonel's Commission
1826	1859	1862	1835	1858	1863
1825	,,	1863	1838	1860	,,
1834	1858	,,	1840	1858	,,
1836	1859	,,	1844	1860	,,
1840	,,	,,	1841	1858	,,
1836	1860	,,	1828	,,	,,

The average length of service from the date of the first Commission being for the British Officers 36 years, and for the Indian Officers 33 years.

So that the Colonels in the British Army are now being superseded by their juniors in the Indian Army, not only without there being any counterbalancing length of service in the lower grades of the Indian Army, but with the additional disadvantage that the total length of service is now substantially greater in the British Army.

92. It has been urged that the extensive and rapid Supersession of the British Colonels will receive a great check when the first transfer of General Officers of the Staff Corps is made to the British List, under the 12th Clause of the Royal Warrant of 15th June, 1864, as at that time about 45 or 50 General Officers will be at once added to the British Establishment; and that this may be expected to take place in about 2½ years; but this addition will be very slow in materially accelerating the promotions of the Colonels, probably by not more than 2 or 3 in each year, and it must be remembered that for these 2½ years the supersession will be going on certainly in no decreasing ratio. The subsequent addition will be made from time to time in the order in which the Indian Staff Corps Colonels would have been promoted, had they remained on the Indian Establishment instead of having been placed on the Amalgamated List of Colonels of the British Army. It is believed that when this last addition shall have been completed, the British List will be further increased by about
Appendix E. 45 or 50 Staff Corps Generals, making a total of 90 or 100 above the present Establishment; but the operation will be very slow, and it has been calculated that it will probably not be completed in less than about 11 years from the present time.

93. The number of Colonels of Cavalry and Infantry in the British Army promoted to be Major-Generals in the years 1867–68, and the first ten months of the present year, appear by the Army List to be as follows:—

Appendix R.

In 1867	8
1868	26
11 months, 1869	11
Total . . .	45

and it is to be observed that the promotions in 1868 were 7 in excess of any year since 1860.

94. It may therefore be calculated that not more than 45 Colonels of Cavalry and Infantry on the British List will have been promoted in the next 2½ years, and that number will not include all the Colonels of 1858. If at that time the Colonel on the Indian List (Colonel Shakespeare), after whose promotion the first transfer of the Staff Corps Generals to the Amalgamated List is to take place, shall have been promoted, there will be eleven Major-Generals of the Indian Service who were only Colonels of February 1866, while, as before stated, several Colonels of the British Service of the year 1858 will still be in that rank.

95. The promotion of the Colonels on the Indian List will still be going on, starting with an advantage of more than 7 years over those of the British Service, and each one consequently passing over some hundreds on the Amalgamated List.

Appendix D. 96. The case as respects the Senior Colonels of the Staff Corps is correctly stated in the 28th, 29th, and 30th Articles of the Report of Colonel Egerton's Committee, and which we accordingly transcribe:—

"28. It is not only in respect to the Senior Colonels of the British List that the operation of "the Royal Warrant of 15th June, 1864, has had an injurious effect; but the position and prospects "of those Colonels of the Indian Staff Corps who head the Amalgamated List, and will have to rise on "that List, have, if possible, been more grievously and detrimentally affected, and their case equally "demands a remedy.

"29. At the present average rate of promotion to the rank of Major-General on the British List, "it will take 15 *years* to promote the Colonel next before Colonel Salmon, a Staff Corps Officer, who "heads the Amalgamated List.

"30. At the present average rate of promotion to the rank of Major-General on the Indian List, "it will take three years to promote the Colonel next before Colonel Salmon on that List. Hence, "under existing arrangements, there will be a difference of 12 years in the date of rank as Major-"General between Colonel Salmon and the next senior to him on the Indian List (Colonel "Shakespear), although their commissions *as Colonel* date on the same day, and the former entered "the service 14 *years before* the latter."

97. It is impossible to estimate in what degree this disadvantage may be lessened to the junior Colonels of the British Service and those of the Staff Corps after the long period of 10 or 11 years, but it may be confidently predicted that the Indian Colonels of Cavalry and Infantry, who will remain to be promoted even on the reduced list of 80 or 90 General Officers of the Indian Army, will be even then so very far junior to the Colonels on the Amalgamated List of the British Army, that any tolerable equality in the rise from Colonel to Major-General in the two Armies will not be reached under the present Regulations at any period which it would at this time be possible to estimate.

98. We cannot consider that the injury thus sustained by the Colonels of the British Army is one only of a light or temporary nature. The extent to which they are passed over by those of the Indian Service is most keenly felt by them, and if, as has always hitherto been held, it is important that in the two Armies, serving the same Sovereign and acting together in all situations, equality of promotion in the ranks qualifying for Commands should be maintained, it seems to us highly necessary that some steps should at once be taken to check the progress of, if it may not be possible entirely to remedy, the inequality which now in so great a degree exists. With this view we feel justified in suggesting some measures which under a state of things less pressing we should hesitate to recommend.

99. It has been proposed in the Correspondence, with which we have been furnished, between the Military Departments and the India Office, that each Colonel on the British Establishment when promoted to the rank of Major-General should be restored to his relative place and take his position on the Generals' List of the two Armies according to his seniority as Colonel; and that the same course should be adopted by means of antedates in the case of the present General Officers, whose Commissions as Colonels bear date on or after the 28th November, 1854; the alteration of dates in no case to carry back pay or to give a claim to any Brevet promotion in the lower ranks. Appendix B.

100. We have carefully considered this suggestion, and the majority of the Committee are of opinion that some such measure ought to be adopted so far as regards the prospective promotions of British and Indian Generals.

101. But with respect to antedating the Commissions so as to affect the relative position of the present Major-Generals, a great difference of opinion has existed among us; and the majority of the Committee are of opinion that no sufficient case of injustice or hardship has been made out, to warrant us in recommending the adoption of any retrospective measure.

102. Every Officer who has obtained his grade in the Indian List, and his consequent relative position in the whole Army, has obtained it by the operation of general Rules which were carefully considered, and were deliberately framed with the knowledge that there would be distinct and unequal promotions from the rank of Lieutenant-Colonel; and that was done in some degree to counterbalance the distinct and unequal promotions up to that grade in different portions of the Army.

103. The fact that subsequent events have made the working of the System far more unequal in the general result than was intended, may be a good ground for a prospective alteration in the System itself; but ought not to affect any individual in the position which he has legitimately attained.

104. If once the existing Lists were to be revised, with a view to correcting the past, we do not know any sound principle on which we could stop, short of revising the entire List of General Officers of both Armies.

105. As regards the Service in India, the majority of the Committee are of opinion that the system of the Local, or so called "Fane," Brevets should be again introduced and made applicable prospectively to both Armies in that Country; so that whenever any Colonel of either Army shall become a Major-General—except for distinguished service—all Colonels in India senior to him would be promoted to the Local rank of Major-General, so as to preserve their previous seniority.

106. There remains, however, the main and very difficult question of remedying in any degree the case of the great mass of Colonels of the British Army, who have been passed over by their Juniors in that rank in the Indian Service.

107. It has been suggested that all these officers should at once be promoted to be Major-Generals with the necessary antedates of their Commissions, but without receiving the Unattached Pay of the rank, and be allowed to hold appointments and commands open to them now as Colonels; and that the Generals and Colonels of both Armies should then be placed on an Appendix E.

Amalgamated List from which all promotions to the higher rank, according to seniority, should be made.

108. It is obvious that this course would at once restore each Officer to the relative position as a General that he held as Colonel, but it is liable to the grave objection that for a Major-General to remain simply the Commanding Officer of a Regiment, or the holder of a subordinate Staff appointment would be a lowering of the rank which is much to be deprecated, and this unprecedented state of things would not stop with the first batch that would be promoted, but the future promotions must be continued in the same manner, and with the same result. We consider that the question of the immediate formation of the Amalgamated List must be dependent upon the adoption of the above Scheme, which, for the reasons stated, we cannot recommend, as, unless it were adopted, the Amalgamation of the Lists of Colonels of the two Armies at present would prevent the promotion of any Colonel of the Indian Army probably for some years, and this we consider an infringement of the Parliamentary Guarantee to the Indian Officers.

109. We consider it right to observe that the existing Regulations do not merely affect the promotion of Colonels to the rank of Major-General, but also their subsequent promotion to the higher grades, arising from the fact, as already stated, that, while in the British Army the numbers of Generals and Lieutenant-Generals united are equal to the number of Major-Generals, in the Indian Army the numbers of Generals and Lieutenant-Generals are only one-half of the number of Major-Generals. We therefore recommend that, in altering the Regulations prospectively, care should be taken to prevent Supersession in the promotions to the higher grades of Lieutenant-Generals and Generals.

Par. 21.

W. M. JAMES, *V.C.*
C. YORKE, *General.*
D. A. CAMERON, *Lieut.-General.*
R. ALEXANDER, *Lieut.-General.*
H. HANCOCK, *Lieut.-General.**

JOHN MILTON,
Secretary.

WAR OFFICE,
15th December, 1869.

* Excepting the paragraphs detailed in my dissent annexed.

DISSENT.

We have signed this Report as we concur in all the preliminary portions of it, but we feel it necessary to state that we altogether dissent from the recommendations of the majority of the Committee, that the remedies suggested, inadequate as we consider them to be for an adjustment of the great inequality of Promotion in the two Armies from the rank of Colonel to that of Major-General, should be only prospective, thus leaving without any mitigation whatever the case of the great number of Major-Generals and Colonels of the British Army who have already been passed over by those who were their juniors in the Indian Army.

We desire therefore to express our opinion :—

1st. That each Colonel on the British Establishment, when promoted to be a Major-General, should be restored to his relative place, and take his position on the Generals' List of the two Armies according to his Seniority as Colonel, and that the same course should be adopted by means of antedates in the case of the present General Officers whose Commissions as Colonels bear date at the earliest period subsequent to the 28th November, 1854, that may be consistent with the convenience of the Service.. In no case, however, should the alteration of dates carry back pay, nor give a claim to Brevet Promotion in the lower ranks.

2nd. That the system of the Local or so-called "Fane Brevets," as explained in the 105th paragraph of the Report, be introduced, and made applicable retrospectively as well as prospectively to both Armies. Difficult as it will doubtless be for the Indian Authorities, by reason of the extensive supersessions which have taken place, to make any arrangement that would prevent in some case a Colonel of the British Army from being compelled to serve under an Officer of the Indian Service who had but recently been his Junior, or to lead an idle life on leave in India or in this country ; still, as it may relieve some Officers from this mortifying alternative, and as the Colonels who have been already superseded are certainly as much entitled to this relief as those who may in future be passed over, we consider that the advantage which these Brevets are intended to confer should not be withheld from them.

3rd. The Committee have stated their opinion that there is nothing in the Parliamentary Guarantee which would prevent a modification of the General Order of 1855, granting rank and precedence to the Officers of the Indian Army in all parts of the world, if the circumstances should become such as to show that some modification of it was required.

We conceive that the extraordinary inequality of promotion from the rank of Colonel in the two Armies which has for some time existed, and will certainly be continued, is a case that does call for a modification of that Order, and we therefore desire to submit our opinion that the rank of General Officer on the Indian List should be confined, as formerly, to the East of the Cape of Good Hope, until the Colonel of next senior date on the British List may become a Major-General.

We must, however, state our opinion that these measures, if carried out, will be a very inadequate remedy for the injury of which the British Army, as our Report shows, have good reason to complain. We are aware that no measure would entirely remove within any reasonable time the great inequality of promotion which now exists in the higher ranks of the two Armies, but the amalgamation on one List of the Colonels and General Officers of both Services. It might be gradually lessened either by an immediate and considerable addition to the Establishment of General Officers of the British Army, or by a reduction of that of the Indian Army, or by giving the British Army the advantage of two vacancies in every three on the Indian List of General Officers until the existing inequality be reduced.

These are the only measures by which we consider that this inequality can be either removed or sensibly diminished, and as such we offer them for consideration, although we are precluded from recommending any of them by the restrictions placed upon the Committee by their Instructions.

C. YORKE, *General.*

D. A. CAMERON, *Lieut.-General*

DISSENT.

Para. 6.—The contingent furnished to India by the British Army was liable to be withdrawn as the necessities of the Home Government required. In 1854, consequent on the War with Russia, the Home Government withdrew a portion of the Contingent Force in India.

Paras. 7, 8, 9.—These paragraphs are erroneous. It was not "from the first a point of "jealous military honour on the part of both Armies, that no Officer of the higher ranks of "either should be superseded by, so as to be placed under the command of a junior Officer "obtaining promotion by the rules of his own Army." On the contrary, the late Duke of Wellington, in the year 1827, and Lord Hill, in the years 1828 and 1834, protected the Lieutenant-Colonels, Colonels, and Major-Generals of the British Army from being superseded by junior Officers of the Indian Army. It was not till the years 1835 and 1836 that Lord Hill protected the Lieutenant-Colonels, Colonels, and Major-Generals of the Indian Army from being superseded by junior Officers of the British Army, as will be seen by Mr. Cochrane's Memorandum of the 11th April, 1866, pages 3, 4, 5, 6.

Appendix D.

Appendix I.

The regulations are not "correctly stated in the Report of the Committee of which "Colonel Egerton was the President in January last." As the 1796 Rules for regulating the rise of Indian Officers in regimental rank are not mentioned, the changes in the rules between 1829 and 1837 are not fully explained.

Appendix D.

Paras. 16, 17, 18, 20, 21.—These regulations were ordered by Her Majesty's Warrant of the 31st January, 1859, to take effect from the 14th October, 1858. The Generals given to the Indian Army were not "based on substantially the same principles" as the British Army, as the same number of Generals and Lieutenant-Generals were not given to the Indian Army as ordered by Her Majesty's Warrant.

Appendix N.

Para. 35.—This paragraph is erroneous. The number of Officers who retired from the Indian Army on the 31st December, 1861, as furnished by Major-General T. T. Pears, C.B., Secretary for Military Correspondence at the India Office, was 126 Lieutenant-Colonels, 93 Majors, and 76 Captains. Only 66 Majors were promoted to Lieutenant-Colonels, 93 Captains to Majors, and 76 Lieutenants to Captains.

Para. 55.—Not "Indian Army," but "Indian Staff Corps."

Paras. 57, 58, 59, 60.—These paragraphs of the Royal Warrant of the 1st January 1862, were cancelled by Her Majesty's Warrant of the 15th June, 1864, and with what object they are inserted in the General Report I cannot conceive.

Para. 67.—As separate lists of British and Indian Officers were ordered, by Her Majesty's Warrants, and promotions were directed to be made up to the rank of General on casualties occurring in either List, of course, it was well known to the authorities in England that Lieutenant-Generals, Major-Generals, and Colonels must, of necessity, be superseded, as the supersessions in both Armies will show.

Appendix N.

Para. 68.—The Officers of the Indian Army were equally distinguished in the Indian Mutiny as the British Officers. There were only 126 Lieutenant-Colonels of the Indian Army who retired on the 31st December, 1861, and only 66 Majors were promoted to Lieutenant-Colonels upon those retirements.

Appendix S.

Para. 70.—There are 1,382 Officers of the British Army on half-pay and unattached pay, as returned from the War Office; and to place these numbers against Officers of the Indian Army on Civil services, or out of active employment, is evidently erroneous.

Appendix M.

Paras. 71, 75, 76.—The supersessions of Lieutenant-Generals, and Major-Generals of the Indian Army are equal to those of the Colonels of the British Army who are Officers of the Line on Full-pay.

Para. 80.—This paragraph is erroneous. "That all portions of the Army should have "substantially their equal share of the promotions, the honours and emoluments of the "profession" is perfectly impossible. The purchase system and other causes in the British Army put Officers constantly above their seniors in their own and other regiments. The Officers of the India Staff Corps are promoted by length of service, and the Indian List by seniority of the Officers of each Regiment.

Para. 81.—The last sentence of this paragraph is likewise impossible, under the Rules which obtain in the British and Indian Armies.

Para. 84.—The Indian List is guaranteed by Parliament by the Acts of 1858 and 1860; also by Her Majesty's Warrant of the 15th June, 1864. The British Officers may supersede those on the Indian List, or those on the Indian List may supersede British Officers; but nothing can justify Sir William James's opinion "that the Crown can hold an equal hand, and

"so far as regards relative rank and precedence, deal with them on exactly the same principles "as it would deal under like circumstances, with the Branches of the Royal Army." The War Office, in its instructions to the Committee (Para. 2) has ordered it to have "regard to "the Parliamentary Guarantee given to Officers of the Indian Establishment by the Acts of "1858 and 1860"; but Sir W. M. James has not regarded these Instructions, and recorded an opinion that the Crown may alter the Parliamentary Guarantee. But Her Majesty will certainly do no injustice to the Indian Army, and will assuredly maintain the Parliamentary Guarantee of 1858 and 1860 in its integrity.

Para. 90.—The Indian Army is not alone in the retirements granted of the 31st December, 1861. The British Army has had large retirements also, as stated in Major-General G. Balfour's evidence before the Committee. Appendix A.

Para. 91.—As regards the last sentence of this paragraph, the Officers of the Indian Army have been superseded far more than the Officers of the British Army on Full-pay.

Para. 94.—There are fourteen Colonels of the Indian Army of 1864 and 1865 not yet promoted. The six above them of 1863 and 1864 are about to be promoted by the deaths of six General Officers.

Para. 96.—Colonel Salmon joined the Staff Corps as Major on the 2nd January, 1861, and was promoted to Lieutenant-Colonel on the 18th February, 1861. Colonel Salmon will probably be promoted to Major-General in about two or two and a quarter years, and 90 Generals, more or less, will then be added to the British Army.

Para. 97.—The Indian List, being guaranteed by Parliament, by the Acts of 1858 and 1860, and also by Her Majesty's Warrant of the 15th June, 1864, cannot be interfered with.

Para. 98.—The supersession of British Colonels, as well as of Indian Lieutenant-Generals, and Major-Generals, must be maintained, in accordance with Her Majesty's Warrants from the 6th October, 1854, to the 15th June, 1864.

Paras. 99, 100, 105.—Nothing could be more unjust than what has been proposed in para. 99.

I dissent too from the proposal of the majority of the Committee to give protective promotions to British and Indian Generals, according to the dates of their Colonel's Commissions; for the British and Indian Lieutenant-Generals and Major-Generals have just as much right to be protected from supersession as the Colonels have. This proposal too appears to include the "Indian List," which is guaranteed by the Acts of Parliament of 1858 and 1860. It also sets aside the regulations with respect to the Indian Staff Corps, as contained in Her Majesty's Warrant of the 15th June, 1864. When the Indian Staff Corps are amalgamated with the British Army there will be no objection to this arrangement, but till then the promotion of British Officers and Staff Corps Officers ought to continue under existing rules.

The instructions from the War Office are, that "if the Committee should be of opinion "that those regulations operate unjustly or unequally in the interest of Officers of either "establishment, they will report what alterations should be made in them, having regard to "the Parliamentary Guarantee given to Officers of the Indian Establishment by the Acts of "1858 and 1860." But these regulations do not appear to act unjustly or unequally on Officers of either establishment. Page iii.

I dissent also from the renewal of the "Fane Brevets" in India. His Royal Highness the Field-Marshal Commanding-in-Chief in England, and the late Secretary of State for War (Sir John Pakington) objected to "reverting to the old system of the 'Fane Brevets,' and of having "recourse to that of General Brevets made applicable to all branches of Her Majesty's Armies "wherever serving, based on the provisions of the Staff Corps Warrant; as it would prove so "extremely inconvenient, and produce so much embarrassment and confusion." Appendix B.

Para. 106.—The Indian Officers have just as much right to be protected from supersession as the British Officers.

Para. 109.—If the opinion of the majority of the Committee be acted on to give Major-Generals prospectively the dates of their rank as Colonels, care should be taken to prevent supersessions in the higher grades of Major-Generals, Lieutenant-Generals, and Generals, in both the British and Indian Armies.

H. HANCOCK,
Lieutenant-General.

15th December, 1869.

Memorandum regarding the wording of the above Dissent.

WITH reference to the paragraph of Lieutenant-General Hancock's Dissent, in which para. 84 is stated to be "Sir William James's opinion," the majority of the Committee claim

their individual and joint responsibility for this, as for every other portion of the Report which they have signed.

C. YORKE, *General.*

D. A. CAMERON, *Lieut.-General.*

R. ALEXANDER, *Lieut.-General.*

TO THE RIGHT HONOURABLE, THE SECRETARY OF STATE FOR WAR.

I HAVE fully considered all the Warrants issued by Her Majesty from the 6th October, 1854, to the 15th June, 1864; also all the papers furnished to the Committee as noted in the Appendix, and the Evidence given before the Committee.

By Her Majesty's Warrant of the 6th October, 1854, it was ruled: "That general "periodical brevets be, for the future, abolished." A new system of promotion was inaugurated by Her Majesty's Warrants. An establishment of General Officers, based on the fair requirements of the British and Indian Armies, was set apart for each service. As by Her Majesty's Warrants separate lists of officers of the British and Indian Armies were ordered, and as these Warrants directed that casualties occurring in either List should be filled up by promotion to the rank of General, it was well known to the authorities in England and India that supersessions of British and Indian Lieutenant-Generals, Major-Generals, and Colonels must of necessity occur. In consequence of the new system of promotion above mentioned, Lord Hardinge, who was Commander-in-Chief in England in 1854, by Her Majesty's command ordered that the "Fane promotion" hitherto prevailing in India should no longer be permitted to exist. The following extract from the "London Gazette," of the 1st May, 1855, was published:—

"*Horse Guards, 25th April,* 1855.

"Memorandum.

"In order to remove any doubt which may exist as to the rank and precedence of the officers of "the Honourable East India Company's Service, it is Her Majesty's pleasure that officers of the "Honourable East India Company's Service, whose commissions shall be signed by authorities duly "deputed to do so by Her Majesty, shall have rank and precedence with officers of Her Majesty's "Regular Army, according to the dates of their commissions, in all parts of Her Majesty's dominions "or elsewhere."

The above Memorandum was issued in the interests of the Home Government, and not for the benefit of the Indian Officers. They were employed in the War with Russia in 1855; and it was in prospect of a similar contingency that they are to serve "in all parts of Her "Majesty's dominions, or elsewhere."

Appendix C. The copy of correspondence from Officers of the British Army, the copy of correspondence (No. 1 to 46 inclusive), the Report of the War Office Committee, and Major-General
" B. Sir Percy E. Herbert's first Memorandum, all set forth the supersession of British Colonels by
" D. junior Colonels of the Indian Army; but no mention is made in any of these papers of the
" E. supersessions of Major-Generals of the Indian Army by junior Major-Generals of the British Army. These latter Supersessions should have been stated and communicated to the House of Commons, as the House of Commons has been left under an erroneous impression that only Colonels of the British Army have been superseded by junior Colonels of the Indian Army.

Appendix M. The supersessions of Lieutenant-Generals and Major-Generals of the Indian Army are taken from Hart's Army List of the 1st January, 1869, and from the War Office Army List of the 1st January, 1869, as regards Major-Generals of the Indian Army.

The Retired Full-Pay Officers of the British Army are not included in the above Supersessions.

The Supersessions above mentioned have been examined by the Committee, and will be found in the Appendix.

The above supersessions of Lieutenant-Generals, Major-Generals, and Colonels of the British and Indian Armies being in accordance with Her Majesty's Warrants from the 6th October, 1854, to the 15th June, 1864, are fair and just inobedience to Her Majesty's commands.

The Officers of the British Army and the Officers of the Indian Army must of course be considered on an equal footing as regards "distinguished services in the field."

Appendix K. It appears from Major-General T. T. Pears's Memorandum of the 9th July, 1869, that

" not above one-fourth of the Officers temporarily superseded are Officers of the Line on Full-" pay, and that a portion of these only will be found in India;" the remainder being Colonels of the British Army, Ordnance Corps, or Royal Marines, who have retired on "unattached, " Half-pay, or Full-pay." There are 1,382 Officers of the British Army on Half-pay, as returned by the War Office; and with the exception of about 40 Half-pay Lieutenant-Colonels and Brevet-Colonels on Staff employ, the rest do no duty, and many have retired for many years. There are no "Unattached, Half-pay, or Full-pay" Officers in the Indian Army, as when they retire they are out of the Service altogether. But Indian Officers are obliged to serve in India all their lives, except when on furlough. Officers on Full-pay in the British and Indian Armies are all Combatant Officers and may fairly be put together on an equality. Appendix .

The following is an extract from Major-General G. Balfour's Memorandum, showing the proportion of Generals ordered by Her Majesty's Warrants from the 6th October, 1854, for the British and Indian Armies:— Appendix G.

" V. It appears, judging from incidental remarks in the Reports on Promotion of the Commissions " of 1854 and 1858, that the number of Generals assigned to the several branches of the Army had " some relation to the number of Combatant Officers.

" The number of officers in the Artillery was 692, and for these 32 Generals were allowed, being " a proportion of 1 to 21 officers.

" The Royal Engineer Officers were 336 in number, and for these 16 Generals were allowed, " giving also 1 General to 21 officers.

" The number of officers in the Cavalry and Infantry was 4,833, for whom 234 Generals were " allowed, giving nearly the same proportion of 1 to 21 officers.

" For the Indian Army, however, comprising 5,400 officers, only 220 Generals were allowed, " being in the proportion of 1 General to 24 officers.

" Moreover, the distribution of this number of Generals into the three grades was unfavourable to " the Indian Army.

" In the Marines one half of the number of Generals allowed were full Generals and Lieutenant-" Generals, and the other half Major-Generals.

" The same proportion was observed in the Artillery and Engineers, and a little more favourable " in the Cavalry and Infantry of the Line.

" In the Indian Army however the number of the two superior grades of Generals was only about " half that of the Major-Generals, as will be seen by the following Table:—

	Artillery.	Engineers.	Cavalry and Infantry.	Total.	Marines.	Indian Army.
Generals	6	3	50	59	2	25
Lieutenant-Generals ..	10	5	70	85	3	50
Total	16	8	120	144	5	75
Major-Generals	16	8	114	138	5	145
Total	32	16	234	282	10	220

" The operation of the more favourable scale on which the grades of the Generals' rank is fixed " for the British Army, will be clearly seen by contrasting the position now occupied by a few officers " formerly in the Indian Army, with that which they would have held, if they had not been transferred " from the Indian to the British Army.

" I find that four Officers of the late Indian Army—Carmichael, Grant, Vivian, and Wyllie—have " for seven years past held the rank of Lieutenant-General; whereas had they continued on the Indian " List, they would only have attained that rank some time later.

" Again, Major-General Hale, who was, about a year ago, promoted to the rank of " Lieutenant-General would, if still on the Indian List, have stood low down on the list of Major-" Generals, and would have had no chance of advancement to the grade of Lieutenant-General within " the next few years."

By Her Majesty's Warrant of the 15th June, 1864, it was ordered: "As the number of " General Officers on the British List increases, and the number on the Indian List diminishes, " the establishment of Generals, Lieutenant-Generals, and Major Generals on each list shall be, " from time to time, so adjusted as to maintain, as nearly as may be, the proportion now " existing in the British Service; but any reductions that may be requisite shall be made only " by gradual absorption of every third vacancy amongst supernumeraries in the high grades."

The proportion of Generals, Lieutenant-Generals, and Major-Generals now existing in the British Army, has not been carried out in the Indian Army, as ordered by Her Majesty's Warrant of the 15th June, 1864.

On the 30th September, 1862, three European Cavalry regiments and nine European

Infantry regiments were transferred from the Indian to the British Army, adding to the British Army seven Lieutenant-Generals and five Major-Generals; total, 12.

By Her Majesty's Warrant, of the 1st January, 1862, par. 9, it was ordered that three General Officers "should be added to the 12 General Officers above-mentioned"; but this addition has not yet been made.

On the 14th May, 1867, the Engineer Corps were transferred from the Indian to the British Army, adding to the British Army two Generals, four Lieutenant-Generals, and six Major-Generals; total, 12.

On the 29th September, 1868, the Artillery Corps were transferred from the Indian to the British Army, adding to the British Army six Generals, eight Lieutenant-Generals, and 20 Major-Generals; total, 34; but as there is only an establishment of 26 Generals allowed for the Artillery, eight have to be absorbed.

The Generals of the Indian Army are now reduced to 20 Generals, 40 Lieutenant-Generals, and 113 Major-Generals; total, 173.

In about two years, when Colonel Salmon, the Senior Colonel on the British Amalgamated List, would, had he remained on the Indian List, be promoted to Major-General, about 90 Generals, more or less, will be added to the British Army, the Indian List of Generals being concurrently reduced.

Appendix A. The following extract is taken from the evidence given before the Committee by Major-General G. Balfour, C.B.:—

"128. There was a very strong point mentioned both by Sir Percy Herbert and Colonel Adye in "their evidence, and it was with reference to the inducement which had been held out to the Indian "Army for officers to retire, as being of an exceptional nature. No doubt the applicability of that "word depends upon the extent to which it is carried as to its being correct, but I think that "inducements in the English Army have also at various times been held out in various ways, both to "induce English Officers to retire, as well as to give them promotion. In fact, the English Army "between the peace of 1815 and 1854 could never have kept pace with the age if they had not done "so; as a means of promotion in the Queen's Army a very important measure was carried out, and "which partly is being carried on to this day. In 1823, it began either with the Marines or the "Artillery, I forget which; but seeing the stagnation of promotion in those two Seniority Corps, the "Government of that day came to the determination to permit officers of Infantry and Cavalry to "purchase rank of the officers of Artillery, Engineers, and Marines who were disposed to sell out: "that is to say, a Lieutenant-Colonel of Marines who was anxious to leave the Army was allowed "to receive a certain sum from a Major of Infantry in the British Army; who thereby became a "Lieutenant-Colonel in what they called the Unattached List, so that a very large augmentation, "which has continued to this day,—and officers benefit by it,—was made to the British Army inde-"pendently of the regimental one, I believe, of 225 Lieutenant-Colonels alone; but the information "upon that point is very incomplete, and therefore difficult to get at.

"By the Commission over which the Duke of Wellington presided in 1840, that question was "very thoroughly gone into, and the large expense to which the nation had been put by the sale of "the Commissions in the Seniority Corps of Marines, Artillery, and Engineers was fully pointed out. "That was one opening that was given as an inducement to officers to obtain promotion, which "was much of the same character as the Indian retirements. In addition to that, in the year 1840 "there was a considerable increase made to the amount which was paid by the nation for the full-pay "retirements of the Infantry and Cavalry, Artillery, and Engineers. Again, in the year 1854, "an increase in the full-pay retirements took place by the recommendation of the Commission "which sat at that time. I think that for the Ordnance Corps the amount was then increased to "48,000*l.*

"129. I may remind you that all that is given very minutely in the Report of 1854?—That is "so. But another increase has taken place; two years ago a sum of 12,000*l.* was given to the "Ordnance Corps to induce officers to retire."

"130. (*Sir C. Yorke.*) When was that?—That was about two years ago that was a fresh "addition. It is now a sum of 60,000*l.* for the two Ordnance Corps, as an inducement to officers "to retire."

At the recommendation of a Commission appointed in 1858, 115 Lieutenant-Colonels of the British Army were promoted to Colonels, to place them over 206 Colonels, their juniors, promoted under the Regulations of 1854.

Appendix N. On the 31st December, 1861, the Secretary of State for India induced 126 Lieutenant-Colonels (of whom four were Major-Generals and 80 Brevet-Colonels), 93 Majors (of whom seven were Brevet-Colonels and 19 Brevet Lieutenant-Colonels), and 76 Captains (of whom three were Brevet Lieutenant-Colonels and 21 Brevet Majors), to retire from the Indian Army, by offering them "extra annuities" in addition to their pensions. Consequent on these retirements 66 Majors were promoted to Lieutenant-Colonels, 93 Captains to Majors, and 76 Lieutenants to Captains. Of the promotions thus made five officers, Colonels P. Harris (deceased), J. Travers, R. N. Faunce (deceased), E. L. Russell, and M. Galway, were promoted to Major-Generals. The advantages held out to officers of the British Army to retire, and give promotion to junior officers, as shown in the evidence given by Major-

General G. Balfour before the Committee, may be regarded as equivalent to the retirement of Indian officers in December 1861.

The European and Native force now serving in India, as obtained from the War Office and India Office (not counting officers) is as follows:—

	Bengal.	Madras.	Bombay.	Total.	General Total.
BRITISH ARMY (Europeans).					
Cavalry	3,167	906	708	4,781	
Infantry	26,151	6,985	8,003	41,137	
Engineers	55	13	13	81	
Artillery	6,038	2,908	2,471	11,417	57,416
INDIAN ARMY (Natives).					
Cavalry	8,702	1,401	3,639	13,742	
Infantry	34,976	28,330	21,581	84,887	98,629

The late Duke of Wellington, in his Memorandum dated 18th September, 1827, laid down this principle with reference to officers of the East India Company's Army in India: "An officer who has distinguished himself at the head of one of His Majesty's regiments, and "who may thereby have rendered essential service at an important moment, must not be "liable to be superseded by one junior to himself in the rank of Lieutenant-Colonel, either as "Colonel or subsequently as a Major-General." Appendix D.

The following is an extract from Mr. G. Cochrane's Memorandum, dated 11th April, 1866:— Appendix I.

"The Duke of Wellington having left the Horse Guards before the discussion terminated, the "decision devolved upon Lord Hill.

"The result was communicated to the Government of India by the Court of Directors, in a "despatch dated 3rd December, 1828:—

"We have taken into early and most attentive consideration your Military Letter of the 9th "February, 1828, and having communicated with His Majesty's Ministers and the General Com-"manding-in-Chief, on the important topics therein brought to our notice, we have the satisfaction to "announce to you the following arrangements:—

"An arrangement has been made in communication with the high Authorities above adverted to, "for granting the rank of Colonel, regimentally, to every Lieutenant-Colonel Commandant of a "Regiment of Cavalry or Infantry, or of a Battalion of Engineers, or of Artillery in one service.

"You are to observe, however, that with a view to prevent the supersession of His Majesty's "officers by the indulgence now accorded to the Company's Officers, the Commander-in-Chief in India "will be empowered to grant the temporary and local rank of Colonel, by Brevet, to any Lieutenant-"Colonel of His Majesty's Service who might without such grant, be superseded by a Company's "Officer rising to the rank of Colonel regimentally.

"It is moreover understood that if one of His Majesty's Lieutenant-Colonels so promoted at one "Presidency, shall be removed to another Presidency, such promotion will be cancelled; but another "Brevet Commission will be granted to him, if necessary, to put him on a par, in respect to rank, with "the Officers of the Establishment, to which his services shall have been transferred."

But no provision was made for protecting the Lieutenant-Colonels of the Indian Army from supersession. The effect of this was, according to paras. 14 and 16 of Mr. G. Cochrane's Memorandum, that during two years 97 Lieutenant-Colonels of the Indian Army were superseded by junior Lieutenant-Colonels of the British Army. The Court of Directors pressed the subject on the attention of the President of the Commissioners for the Affairs of India, and the decision of the Home Government was communicated by the Court of Directors to the Government of India in a despatch dated 28th January, 1835:—

"The Commander-in-Chief in England, Lord Hill, with His Majesty's approbation, sanctioned "that both King's and Company's Officers shall bear the same relative rank to each other as Colonels, "as they previously held in the rank of Lieutenant-Colonel, with this understanding, however, that "when the number of Field Officers may be too small in camp or quarters, Colonels not commanding "Brigades, will be placed on the Field Officers' Roster."

It was not till the 25th March, 1834, Lord Hill, the Commander-in-Chief in England, extended to the Officers of the Indian Army that they "should be allowed to participate in "the advantages enjoyed by the King's Officers for 'distinguished services in the field;'"

and in the same letter Lord Hill ordered "that under no possible circumstances can it be "permitted that a Lieutenant-Colonel in the King's Service should be superseded by one "junior to himself in the rank of Lieutenant-Colonel, or Colonel, or subsequently as Major-"General."

Appendix B. On the 15th and 31st August, 1865, the Commander-in-Chief in India, Sir William Mansfield, addressed two letters to the Military Secretary, Horse Guards, London, bringing to notice that six Colonels of the British Army had been superseded by junior Colonels of the Indian Army promoted to Major-Generals. Sir William Mansfield recommended the renewal of the "Fane Brevets in India, and to have recourse to a system of brevet promotions which "shall be good all over the world for fixed terms of service, according to the rules which have "been laid down for the Staff Corps."

Appendix B. In a letter addressed by Lieutenant-General W. F. Forster, K.H., to the Under Secretary of State for War, dated 19th March, 1867, His Royal Highness the Field-Marshal Commanding-in-Chief stated that "the remedy proposed by his Excellency, viz., that of revert-"ing to the old system of 'Fane Brevets,' and of having recourse to that of General Brevets "made applicable to all branches of Her Majesty's Armies wheresoever serving, based on the "provisions of the Staff Corps Warrant, would prove so extremely inconvenient, and produce "so much embarrassment and confusion that His Royal Highness considers it would be "most inexpedient to attempt to re-adjust the inequalities brought to notice by the adoption "of such remedial measures." Other objections were stated in the same letter, and it was added that, "If the Secretary of State concurs in these views, His Royal Highness proposes to "forward a copy of this letter to India for Sir William Mansfield's information." The Secretary of State for War, Sir J. Pakington, in a letter from Lieutenant-General Sir E. Lugard, G.C.B., to the Military Secretary, Horse Guards, dated 3rd April, 1867, stated that he "concurs in the views expressed by His Royal Highness on this question, and in the pro-"posed communication to Sir William Mansfield."

Appendix B. The following remarks were made by His Royal Highness the Field-Marshal Commanding-in-Chief in England, in a letter from Lieutenant-General W. F. Forster, K.H., to the Under Secretary of State for War, dated 9th July, 1868:—

"The only absolute remedy would be to make the rank of all Generals on the Indian List local, "until such time as they would fall in at their proper date on the British List, that is, when the "Colonel of next senior date on the British List became a Major-General, the local rank held by the "Indian Officers should become Army rank; and that Major-Generals and Colonels of Her Majesty's "British Army appointed to commands in India should have local rank in that country, placing them "in their proper relative positions with the Generals of the Indian Army.

"This, however, would be a retrograde measure, and one so much in disaccordance with what has "been already established by Royal Warrant, that His Royal Highness conceives it would be objec-"tionable to entertain it."

Appendix B. On the 24th March, and 9th April, 1869, Lieutenant-General Sir E. Lugard, G.C.B., addressed letters to the Military Secretary, India Office, stating that, "It appears to "Mr. Cardwell that it would mitigate, though not remove, the cause of grievance to which "this supersession gives rise, if each Colonel on the British Establishment, when promoted to "the rank of Major-General, were restored to his relative place, and took his position on the "General List, according to his seniority as Colonel, the same course being adopted by means "of ante dates in the case of the present General Officers, whose commission as Colonels "bear date on or after the 28th November, 1854. The arrangement proposed in my letter "of the 24th March is to apply to all officers whose Colonelcies bear date on or after "the 28th November, 1854." In a letter from Major-General T. T. Pears, C.B., to the Under Secretary of State for War, dated 16th April, 1869, he states, "that the Duke of "Argyle has no objection to offer to the measure which Mr. Cardwell proposes at once to "adopt with a view of mitigating the grievance."

But this arrangement was setting aside Her Majesty's Warrants from the 6th October, 1854, to the 15th June, 1864, and the effect would be the supersession of the whole of the Major-Generals of the Indian Army. The first 38 Lieutenant-Generals of the Indian Army in the War Office Army List of 1st January, 1869, had their Major-Generals' Commissions dated on the 28th November, 1854.

Appendix B. But in a letter from Lieutenant-General W. F. Forster, K.H., to the Under Secretary of State for War, dated 19th June, 1869, His Royal Highness the Field-Marshal Commanding-in-Chief objected to this arrangement, and proposed, "That the rectification of dates of commission "should apply only to such officers as have been, or may be, promoted to be Major-Generals on "or after the 6th March, 1868, the date on which the 6th Clause of the Warrant of June 1864 "came into effect. Thus all those Major-Generals of the British Army who have been promoted "since that date would be ante-dated to the 6th March, 1868, and all Colonels of the British

"List who may hereafter be promoted until the period contemplated in the 10th Clause of the "Warrant arrives, would receive such dates to their commissions as Major-Generals as will "place them in their proper position relatively with the Indian officers, according to their "dates as Colonels."

But this proposal would supersede all the Major-Generals of the Indian Army promoted since 1854, in opposition to Her Majesty's Warrants issued from the 6th October, 1854, to the 15th June, 1864.

Since the 15th May, 1869, two Generals, one Lieutenant-General, and three Major-Generals of the Indian Army have died. Her Majesty's Warrants since the 6th October, 1854, ordered that any casualties, either on the British or Indian Lists of Officers should be filled up by promotion to the rank of General. Although promotions on the British Lists have been regularly made up to this time, Her Majesty's Warrants have been set aside at the India Office, as well as the Parliamentary Guarantee of 1858 and 1860. The following remark was made by the Field-Marshal Commanding-in-Chief in England in His Royal Highness's letter to the Secretary of State for War, dated 10th April, 1869:—"I should be inclined to suggest "the suspension of any further promotion of Colonels of the Indian Army until the question "with regard to those of the British Service had been decided on, were it not that I should "be adverse from proposing any step tending to deprive officers of the Indian Army of that "which they have been guaranteed by Royal Warrant." I am of opinion therefore that the promotions at the India Office ought not to have been stopped, in opposition to Her Majesty's Warrants, and that these promotions ought to be made without any further delay. Appendix B.

The instructions from the War Office (para. 2) require the Committee to have "regard "to the Parliamentary Guarantee given to the Officers of the Indian Establishment by the "Acts of 1858 and 1860." By the Act of 1858 it was enacted in the 56th Section:— Page iii.

"LVI. The Military and Naval Forces of the East India Company shall be deemed to be the "India Military and Naval Forces of Her Majesty, and shall be under the same obligations to serve "Her Majesty as they would have been under to serve the said Company, and shall be liable to serve "within the same territorial limits only, for the same terms only, and be entitled to like pay, pensions, "allowances, and privileges, and the like advantages as regards promotion and otherwise, as if they had "continued in the service of the said Company."

The Officers on the Indian List are guaranteed all the above advantages; and Her Majesty's Warrants since the 6th October, 1854, also confirm to them the same advantages. The British Officers may supersede those on the Indian List, or those on the Indian List may supersede British Officers, but the Parliamentary Guarantee cannot, under any circumstances, be set aside.

Her Majesty's Warrant of 15th June, 1864 orders, "I. The whole of the officers of "Cavalry and Infantry of Her Majesty's Indian Army shall remain on the Indian General "List, as before the Warrant of the 1st January, 1862, and shall rise on that List to the rank "of General Officer, the establishment of General Officers of the Indian Army being, from time to time, reduced in the manner hereinafter provided."

The promotion of British Officers to the rank of Colonel, through the purchase system and other causes, is much more rapid than that of the Indian Officers. A reference to the British Army List will show that many Officers have obtained their Colonelcies in comparatively short periods from the dates of their first commissions. But the Officers of the Indian Army generally have had to serve for much longer periods to obtain their Colonelcies. The Officers of the Indian Staff Corps cannot attain a Brevet Colonelcy under 31 years, and have to serve 38 years for a Colonel's allowance.

The following Return will show the total years of service of Colonels and Lieutenant-Colonels of the Indian Army on the 17th February, 1861, as recorded by Major-General G. Balfour, C.B. Appendix A.

SERVICES of the Colonels and Lieutenant-Colonels of the Indian Army on the 17th February, 1861.

Total Years Service.	Number of Colonels and Lieut.-Cols.			Abstract.		
	Colonels.	Lieutenant-Colonels.	Total.	Colonels.	Lieutenant-Colonels.	Total.
52	1	..	1			
50	1	..	1			
47	1	..	1			
44	5	..	5			
43	10	..	10			
42	30	..	30			
				48	..	48
41	38	1	39			
40	15	3	18			
39	10	4	14			
38	23	11	34			
37	9	7	16			
				95	26	121
36	23	35	58			
35	4	11	15			
34	8	21	29			
33	7	11	18			
32	4	9	13			
31	..	9	9			
30	1	6	7			
				47	102	149
29	..	2	2			
28	1	3	4			
27	..	3	3			
26	2	8	10			
25	2	5	7			
				5	21	26
24	7	11	18			
23	2	8	10			
22	..	3	3			
21	1	14	15			
20	3	2	5			
				13	38	5
19	..	9	9			
18	..	3	3			
17	..	1*a*	1			
15	..	1*b*	1			
12	..	1*c*	1			
				..	15	15
	Total			208	202	410

a Norman. *b* Greathead. *c* Probyn.

(Signed) G. BALFOUR,
Major-General.

The fact is, that we have to do at present with two Services and two systems of promotion. The representatives of the British Army wish to retain their advantages on the one part, and to compel the Officers of the Indian Army to accept their disadvantageous system on the other, thus ensuring to the latter, in the long run, a career of promotion far inferior to their own.

But the regulations established by Her Majesty's Warrants, from the 6th October, 1854, to the 15th June, 1864, must be carried out in their entirety; and the supersessions of both British and Indian Officers must be maintained in obedience to Her Majesty's Commands.

I see no cause therefore to suggest alterations in Her Majesty's Warrant of the 15th June, 1864.

H. HANCOCK,
Lieut.-General.

WAR OFFICE,
16th December, 1869.

MINUTES OF EVIDENCE AND APPENDIX.

APPENDIX A.

MINUTES OF EVIDENCE taken before the Committee appointed to enquire into the Supersession of British Officers by Officers of the Indian Army.

War Office, Saturday, 25th September, 1869.

PRESENT:

Sir WILLIAM M. JAMES, *President.*

Sir CHARLES YORKE. | General ALEXANDER.
Sir DUNCAN CAMERON. | General HANCOCK.

Major-General Sir PERCY E. HERBERT, M.P., examined.

1. (*President.*) The Committee have before them your Memorandum. Is there anything further that you wish to add?—Yes; I wish to make a statement; but first of all I wish to say that it is only because I happen to occupy a seat in the House of Commons that I venture to put myself forward before the Committee in this matter. I am not authorized in any way to speak in the names of the Officers of the Army, but I felt it my duty, as an Officer of the Army and acquainted with the subject, to give my attention to it as a grievance complained of, having, as I said before, the advantage of a seat in the House of Commons. It is not with any hostile spirit to the Officers of the Indian Army that I have done so. The connection of my family with the East India Company and its Army precludes me from taking up anything in that spirit; and I have more than once been in communication with Indian Officers upon their personal grievances, and have endeavoured to ascertain whether the alleged grievances were well-founded by going to the authorities to make enquiries which I felt bound to do when applied to, so long as I thought that there was any justice in their complaints. As a member of the House of Commons I felt bound to do so.

2. The Committee are well aware that you have taken up this subject merely as a matter of public duty, as effecting the public service?—I will now, if you please, proceed with my statement. I believe that each of the Members of the Committee is in possession of a copy of the Memorandum which I prepared in the course of last summer upon the subject of the Supersession of Officers in the Queen's Army, and I wish to draw the attention of the Committee to the act, that the supersession which is complained of as a grievance, affects the three branches of the Queen's Service—that is to say, the Royal Engineers the Royal Artillery, and the Infantry and Cavalry. The Committee are aware that since the year 1854, in the British Army, the Officers belonging to those three branches of the Service have risen to the rank of Major-General on separate lists. Previously to that time there was a system of promotion by General Brevets, and under that system of General Brevets, no Officer who had attained the rank of Colonel could be superseded by an Officer who was junior to himself, in attaining the rank of Major-General. The Officers of the Honourable East India Company's Army rose from the rank of Colonel to that of Major-General in a like manner at the time of those General Brevets. The amalgamation of the Indian and English Armies was discussed in the House of Commons when I was a member of the House, and in that discussion I took a small part in supporting the proposal that was made on the part of the Government to amalgamate them. The Committee may be aware, if they recollect, or have referred to what took place at the time, that the question brought before the House for discussion was the amalgamation of only the European portion of the Indian Army with the English Army—that it was not thought absolutely necessary to bring it before the House, but it was thought desirable to give the Houses of Parliament an opportunity of expressing an opinion upon the competency and power of the Crown to do it; all that was discussed there was the union of the European branches of the Indian Army with the Royal Army.

3. (*General Alexander.*) You are alluding, I presume, to the Act of Parliament of the 20th of August, 1860?—Yes; it was in the year 1860 that the discussion took place. The amalgamation of the whole of the Officers of the Sepoy Regiments with the British Army, and the formation of a Staff Corps, were in no way involved in that amalgamation, or mentioned in the Act of 1860; the amalgamation might have been confined to the European forces, leaving the other Officers on a purely local footing.

4. (*President.*) Was not the first Act for the transfer of the Government of India to the Crown passed in 1858?—Yes; and it was during the passage of the Act of 1858 through the House of Commons, a clause was inserted, commonly called the "Guarantee" clause.

5. You refer, I think, to Mr. Henley's clause?—Yes; and I believe the truth of the story is that it was drawn with a pencil and a bit of paper by Sir Hugh Cairns, on the crown of his hat, and that it was inserted in the Bill.

6. (*General Alexander.*) It was on the 2nd of August, 1858?—Yes. In reply to the gallant officer's question as to my view of the meaning of the clause, it would be a bold matter for me to attempt to put a meaning upon that clause before Sir William James.

7. (*President.*) On the contrary; I should like very much to have any suggestion that may occur to you, or which may have been made to you upon it?—Then my impression is, and indeed it is a very firm conviction, that the House of Commons thought that it was likely, in consequence of this transfer of the Army and Government of India to the Crown, that wholesale reductions might be made in the Army, that the Officers would be treated shabbily, and have no one to represent them, and the House was therefore anxious that they should be in as good a position as if the transfer had not been made. I am aware that it has been urged in some quarters that in consequence of that Guarantee clause it was not competent to the Imperial Government to make any reduction in the Army that they found in existence in India. But it appears to me to be contrary to common sense and contrary to public policy to suppose that any Government could ever be held bound to maintain a larger

Army in the country than the necessities of the Government required. The argument, I believe, was put forward in such a shape as to lead Lord Cranworth to put paragraph 80 into the Report of his Commission. It is clear that the Crown is competent at any time to put Officers on half-pay or to reduce them, which may entirely deprive them of any opportunity of rising in their profession.

8. Does putting them on half-pay deprive them of the opportunity of rising?—Yes, in some instances, entirely. If a regiment, for example, is disbanded, the Ensigns, Lieutenants, and Captains are liable to be placed on half-pay; they could never rise beyond that rank, unlese again brought back on full-pay. There are now on the Half-pay List subalterns who were put on half-pay at the end of the great European War, after the battle of Waterloo—Captains, Lieutenants, and Ensigns. The subject was also referred to by Sir Charles Wood, when he asserted the competency of the East India Company, or of the Crown, to reduce the Army. The passage may be found at page 94, in the third Series of Hansard, in the Debates of 1864. I believe the Committee are also in possession of the Report of the Committee that sat last year, and which was presided over by Colonel Egerton. In that Report documents are quoted which show that prior to the change in the Government of India great objections had been raised to any Officers of the East India Company, by any special rule peculiar to the East India Company's Army, being promoted over the heads of Officers in the Queen's Army who had attained the rank of Lieutenant-Colonel. The rise from Lieutenant-Colonel to Major-General in the British Army was by seniority. It was required that the Indian Officers should rise in like manner. It was only in a very few isolated instances that it occurred, but at the same time it always formed the subject of communication, either from the Duke of Wellington or Lord Hill, or the Duke of York, as far back as the year 1807, with the President of the Board of Control; and remedies of one sort or another were at that time provided. Either the system of promotion complained of then was altered, or in a later case there were what were called "Fane" Major-Generals, which gave the rank of Major-General to a certain number of British Officers who had been superseded by Junior Indian Officers in the rank of Major-General.

9. (*General Alexander.*) There was no permanent rank given; it was merely local and temporary?—Yes; but at that time the rank of the Indian Officers did not run westward of the Cape of Good Hope, and they were actually, I believe, in the eye of the Law, civilians in this country. Therefore, although it was an awkward arrangement, and one which met, in some degree, an individual grievance, at any rate the principle that I am urging upon the Committee was admitted,—that is to say, that two Armies cannot serve with advantage or fairly together, in the same country, and be on an equal footing, unless their rules of promotion are fair and just one with another, so that Officers who have actually served under the orders of an Officer who has commanded a Brigade, shall not supersede him, and that he shall not be liable to find an Officer who has served under him in his Brigade, put over his head, and commanding him in a Division. Now that is a case which I think every military man, and probably every civilian will see, must strike at the root of all contentment and discipline in the Army, and must, therefore, be prejudicial to the public service. I think I may infer from the correspondence, and from the documents which are referred to in the Report of Colonel Egerton's Committee, that, if the East India Company had continued, the grievance of which I am now complaining would not have arisen; and, if so, that some means would have been found to remedy it. I think that if English Officers, in consequence of some extraordinary promotion, had been passing very rapidly from the rank of Colonel to that of Major-General out in India, the Officers of the East India Company would have applied to the East India Company to remedy the grievance and improve their position, and very fairly they would have done so. There can be no doubt that their complaints would have been attended to. Therefore I say, that to prevent that supersession now will be no breach of the guarantee, as it would not have been permitted if the East India Company had continued to govern India. I say that it is no breach of the guarantee to ask that this supersession should be prevented now. The extent of the evil I have already put before the Committee, and therefore I will only briefly allude to it, because the lists to which no doubt they have turned their attention will show the extent of the evil; but I will just refer to one case especially, which will be found set out at page 5 of my Memorandum. I will take first the case of Major-General Sir David Wood, of the Royal Artillery; he was in command, as Senior Officer of Artillery, either Royal or Indian, during the short episode of the Campaign, as it may be called, the final attack upon and capture of Lucknow. He commanded the whole of the Field Artillery, nine batteries, with the rank of Brigadier, and under his orders there were two Officers who, at the time of his arrival in India, were Brevet-Majors and Captains, commanding Troops of Horse Artillery in the East India Company's Service. I allude to Captain and Brevet Lieutenant-Colonel Tombs, of the Indian Artillery, and Captain and Lieutenant-Colonel Turner. Colonel Turner was promoted to be Brevet Lieutenant-Colonel, I think, in January of that very year 1858, and when Colonel Wood arrived in India, they were both Captains and Brevet Majors. At the time of the formation of this Artillery force under Colonel Wood's orders, one was a Lieutenant-Colonel, the other, I think, was not; but they were both promoted to be Brevet Lieutenant-Colonels in the year 1858, and they commanded batteries of Horse Artillery under Colonel Wood's orders, as their Brigadier, he being a full Colonel of the year 1855, and both of those Officers attaining to the rank of Brevet Lieutenant-Colonel in the year 1858. As I have said, they commanded Troops of Horse Artillery under his orders, and by the arrangement since made—not for any service, because of course I draw a distinction between promotion for distinguished service and promotion in the ordinary course; but by the rules and the operation of the Warrant which is complained of—those two Officers have arrived at the rank of Major-General in the so-called amalgamated force of Royal Artillery, over the head of Sir David Wood, under whose orders they served at the siege of Lucknow. That, I think, puts in a very clear way the grievance I complain of. I will not trouble the Committee with more than that one illustration, because I have put some others into print. I submit, for the consideration of the Committee, that, if the East India Company had retained the government of India, this grievance would not have been allowed to attain the magnitude it has. Therefore it appears to me that it would be no breach of the guarantee to remedy the grievance now, and prevent its future recurrence. I will put the matter before the Committee in another point of view. In 1854, the system of General Brevets was abolished.

10. (*President.*) The Crown did not pledge itself to make Brevets at any time or times; there was that distinction that the General Brevets were the mere spontaneous acts of the Royal Bounty at the moment. There was no pledge given that compelled the Crown to make any Brevet at any time, or to extend it in any degree; but when the Crown substituted for that a system by which, in a certain number of cases, the rank of General Officer was given to one and to another, then there was a pledge of the faith of the Crown, so far as it gave rights to individuals?—What I wish to urge upon the Committee is this, that under the system of General Brevets which had prevailed for a long time up to 1854, no Officer could supersede another after attaining the rank of Colonel.

11. Do you mean that no Officer was allowed to supersede another?—Yes; the practice was—except in the case of an exceptional exercise of the prerogative

of the Crown, which nobody I presume disputes—that no Officer in the rank of Colonel passed over the head of another Officer who was senior to himself. What I desire to impress upon the Committee is this,—that under the system of General Brevets, that which is now complained of never could have arisen, because no Officer was ever promoted to the rank of Major-General except in the order in which he stood as a Colonel. That it is competent to the Crown to revise the Warrant which gives succession by individual vacancies instead of succession by General Brevets I think will not be disputed. No doubt it was intended to give a fair distribution of promotion to the three branches of the Service—the Royal Engineers, the Royal Artillery, and the Line; and if it was found that either of those branches gained an undue advantage, it would be competent, as I maintain, for the Crown to revert to the system of General Brevets now. Under that system the grievance complained of never could have arisen. It was about that time that the right to hold military rank in Europe was given to the East India Company's Officers.

12. One way in 1854, and the other in 1855?—Yes. The system of giving Local Rank I had almost forgotten to refer to; but as it has been referred to by a Member of the Committee I will do so. It was during the Peninsular War, the object being to prevent Officers who had gained experience in the field from being superseded by Officers who were senior to them, but who had just come out from England. It is practised now in the case of Colonial appointments; but that is quite a special matter. Individuals are selected by the Crown to exercise a particular command; such as Commander-in-Chief in a colony or in India, or one of the Presidencies. It is usual to give them a step of local rank. A Major-General is given local rank of Lieutenant-General in South Africa or in the East Indies. That is a case of selection by the Government for a particular post, and bears no analogy to the supersession I complain of. The Duke of Wellington had local rank conferred upon him; and several other Officers in Spain also held local rank. That right has been exercised very commonly in the Colonies—in the Crimea largely; but that is an entirely different case. What I wish to impress upon the Committee is that the system of giving local rank in that way—selecting Officers and giving them that local rank—is in no way the same thing as laying down a rule, or issuing a Warrant which shall give to one class of Officers, perfectly irrespective of their individual merits, or of their supposed merits, an advantage over other Officers, contrary to the rules of the Service under which they both entered. I wish to put before the Committee, on a very broad ground, that it is the greatest possible injustice to amalgamate two Armies and put them on an unequal footing. When it was proposed that the two Armies should be amalgamated there were two simple ways of proceeding, which would have been equally fair; one was, not to amalgamate them at all, and the other was to amalgamate them absolutely as they stood. If you were to amalgamate Lieutenant-Colonels with Lieutenant-Colonels according to the dates of their commissions, and Colonels with Colonels according to the dates of their commissions, in one list, that would be perfectly fair. There was an alternative between doing that and leaving things altogether as they were, as long as the existing Officers were living and serving; but what was done was neither the one nor the other of the two courses I have mentioned. Up to a certain point Officers are amalgamated upon equal terms, and higher up in the list of Colonels the amalgamation was postponed to a future date, so as to enable them to pass over,—I will not say with that object, but practically with that result,—to pass over the heads of men who were senior to them in the rank of Colonel by several years. Now, whatever Parliament intended—and I have no doubt that they did intend that very considerate treatment should be given to the Indian Officers—I am sure they never intended that great injustice should be done to the English Officers. It never occurred to them to think that the effect of the amalgamation would be that the English Officers would be unjustly treated, and therefore they did not consider it necessary to put a clause into the Act to secure for them fair treatment. They thought that the Indian Officers would be the weaker party, and that they would suffer, so they put in a clause to guarantee for them fair treatment. I maintain that the faith of Parliament is pledged to the English Army without any Act of Parliament, and without any clause, just as much as it is pledged to the Indian Army with that clause in the Act of 1858, that they should receive fair treatment and promotion, according to well known rules which existed when they entered the Service, which rules should not be altered to the disadvantage of any particular class, except when any departure from them is absolutely necessary for the public service. I speak of it as a right which the Officers of the Army may fairly expect. Whether the Government gives fast or slow promotion to the Army is not the question that I am now considering; that is not a matter for us to discuss. The Government must consider that question, and decide according to public policy; but what I contend is, that the fair rules under which Officers entered the Service shall not be recklessly altered, or unfairly departed from, to the disadvantage of one class of Officers in favour of another; and to that I maintain that the Officers of the English Army have a perfect right. I repeat again, that I do not refer in any way to selection by Her Majesty's Government of Officers for special service, or to promotion for distinguished services, that of course is quite a separate question. As it has been urged that this is only a social question, and not a professional question, I wish to say a few words upon that point. The social question, as I understand the matter, can only come into play in the case of Officers who have retired from the service, and are not in a position to exercise any military command. For instance, when the new practice was commenced by Her Majesty's Government of giving a step of rank to Officers on retirement from the Service. I do not know whether the President is aware of the fact, but it has been of late years the custom to give to Officers who retire in the rank of Lieutenant-Colonel, after a certain number of years' service, the honorary rank of Colonel, as, in the same way, Colonels retiring under certain rules receive the honorary rank of Major-General. By granting this step of honorary rank, it is supposed that Officers will retire with so much less pay, and therefore the country gains an advantage by bestowing the rank. I suppose that in abstract justice, Officers of the Army might complain that it was an injustice to give Junior Officers the social precedence attached to the rank of Major-General over their heads, because those Officers would have precedence of them in society; but I have never heard any complaint made. If it was complained of, that is what I should call a social grievance.

13. (*General Hancock.*) They do not take rank over you?—Not professionally; they excercise no command. They have retired from the Service. If any Officer who remained serving in the rank of Colonel did complain of a Junior Colonel to him being placed on the Retired List as a Major-General, because he took precedence of him in society as such, that would be what I should consider a social grievance; but no complaint has ever been made that I am aware of on that score. My complaint is that Officers actually supersede others while serving in the Colonies or in India, or in this country, and they are liable at any moment to supersede them; for example, if a force was sent abroad for a campaign they would be liable to find other Officers appointed to the Staff with the dates of their Major-Generals' commissions prior to their own, and yet those Officers might have been actually serving under their orders in the same Brigade with them, in junior ranks in India. Therefore this is no social or sentimental grievance, but a grievance which entails professional injury, of which I complain. I do not come here with the idea of asking the Committee to recommend any quicker or slower promotion in the Army generally; but I make this demand upon the Government, that supersession shall cease, and that no Officer

shall pass over the head of his Senior Officer after having attained the rank of Colonel, except for distinguished services, or by selection, in which case the authorities who appoint him will have to defend the course they have taken upon public grounds. Also, that steps be taken to rectify, so far as it is possible to do so, the injury that has already been done.

14. (*General Alexander.*) You seem to have gone very deeply into the subject, and you have told us that certain inferences may be drawn as to the intentions of Parliament in passing the Act of 1858, in which is to be found the guarantee which has been referred to, in Section 56. Will you take the Act into your hand and point out, either in the Preamble or in any Section of it, from what we are to infer any intention of Parliament beyond what is literally expressed in the 56th Section?—The passage to which I would refer is this:—"And shall be entitled to the like pay, pensions, "allowances, and privileges, and the like advantages as "regards promotion and otherwise, as if they had con-"tinued in the service of the said Company." The whole of my argument has been addressed to those words.

15. Then we require to draw no inference; we need not assume any intention of Parliament beyond what is expressed in the Preamble?—I do not know that I am prepared to answer that question, for I do not quite understand it.

16. But with regard to this Section 56 in the Act 21 and 22 Vict., and after that the Warrants and Regulations that were passed, can you point out anything in them that infringed upon former military practice or precedent which in any way affected the promotions which have been made?—I think that the course of promotion up to the present time, until it was suspended, shows that the Warrant had been drawn in such a way as entirely to upset all former precedents.

17. Will you point out in what way?—Inasmuch as Officers have been passing over the heads of Colonels senior to themselves; Officers who are 8 and 10 years junior to other Colonels have been passing over their heads, and attaining the rank of Major-General, which never occurred before in either Army.

18. There may have been extraordinary rapidity of promotion, but it has not been done upon any new or distinct principle, or differing from any former practice?—Yes; I think it was different from all former practice before 1854.

19. Was it contrary to former precedent?—Yes, I consider so; entirely contrary to all precedent before 1854.

20. As I understand the matter, promotion has been caused by the Crown holding out a particular inducement to certain Officers to retire, of which they have availed themselves; but I do not see that that interferes with former practice or precedent, or in any way with what is guaranteed in the section referred to, or the Warrants and Regulations which have since been issued?—I maintain that it is not competent to the Imperial Government, regarding the Indian Government and the English Government as one, in good faith to do what has been done. Of course it is competent to the Imperial Government, as a mere matter of power, to give greater promotion to one branch of the Service than to the other; but I say that it is a breach of faith to all those who have taken service under the Crown, if one set of Officers is exceptionally promoted according to some new rules laid down subsequently to their entering into the Service.

21. If this rapid promotion had taken place by any other means, however improbable, do you consider that it would also have been a grievance; for example, supposing there had been an extraordinary number of deaths?—Yes, certainly, or anything else. I think that the Government are bound to protect us from having the rules of the Service departed from, as in the supersession of Officers of which I have given examples, who have attained the rank of Colonel. But just let me explain myself. I think that so far as regards the operation of the Warrant of 1854, to a slight degree we might say that there was a breach of faith on the part of the Government in instituting that system instead of General Brevets, as the Officers of the Royal Artillery and Royal Engineers, being on separate Lists, might gain an advantage at one time over Officers in the Infantry and Cavalry who had obtained the rank of Colonel. The object was to give fair promotion to all, and a few individual cases of supersession would never be felt to be any great grievance so long as in a general way fairness was maintained. But if there had been any great supersession of the Line by the Artillery and Engineers, or any great permanent supersession of the Artillery and Engineers by the Line, those cases would have come before the Government for readjustment, and that is what I claim in this case. Although a mistake may have been made in perfect good faith, still the fact remains, as I have stated before, that junior Officers are superseding their seniors in a way that is prejudicial to the public service.

22. (*President.*) You mean to a considerable extent?—Yes.

23. You would not complain of a few individual instances?—No; the very fact of having separate Lists must involve now and then the fact of one Officer getting ahead of another.

24. (*General Alexander.*) But it is not caused by any dereliction of military principle; there has been a larger promotion than could have been anticipated?—I think there has been a dereliction of military principle, and a very grievous one, and it has been carried out to such an extent that you find a junior Officer promoted over the head of another, his senior by many years, under whose orders he had served, and that I consider is a great grievance, and injurious to the public service.

25. (*President.*) The dereliction of principle is in having separate Lists, is it not?—Yes; that is a dereliction of principle; but allowing a Colonel to pass over 150 Colonels senior to him is a worse one.

26. (*General Alexander.*) Does that arise out of the Warrant of 1854?—It arose first in the Warrant of 1854. Nothing of the kind, of course, could have happened if the system of General Brevets had been maintained. It was the making of separate Lists, and departing from the system of General Brevets. No complaint probably ever would have been made if it had only led practically to the grievance of some few individuals, slightly different in rank, passing over one another's heads; but when it is seen to operate in the way that I have pointed out, and everyone is likely to be affected, and it is evident that it must continue for many years, then of course one is driven back to first principles, and one is obliged to say that the arrangement made was not made on a sound principle.

27. There was no dereliction of principle upon the first amalgamation of Officers, was there?—Certainly there was. The amalgamation of the Lists has been unfairly made. It was arranged that a certain number of Colonels of the East Indian Army should not be amalgamated as Colonels, but be amalgamated with the English Army after they had attained the rank of Major-General over their seniors.

28. (*President.*) You refer to the practice of Brevet as if it had established some normal principle of promotion. Can you give me any reason why it is more wrong for a young Lieutenant-Colonel to be made a Major-General over the head of a senior Lieutenant-Colonel than it is for a junior Captain to be made a Lieutenant-Colonel when a senior Captain still remains in that rank?—Yes; I think I can. The principle upon which the English Army has been worked ever since it existed, upon which every other Army is worked,—the Army of Bombay, the Madras Army, and the Bengal Army, and indeed every foreign Army,—is that promotion is regimental up to a certain point. It is not until Officers have attained a certain rank that they may be said to come upon one general List. There is a very obvious reason for this. The efficiency of a Regiment depends upon officers being known to one another and to their men, and if every officer changed his Regiment every time he was promoted, the regimental feeling necessary to efficiency would be destroyed. After attaining the rank of Lieutenant-

Colonel an officer often commands other troops in addition to his own Regiment. Having done so (until now), the practice of the British Army protected him from supersession in the rank of Major-General by any Officer who had served under him. Prior to the Warrant of 1854, in the English Army, Lieutenant-Colonels rose by seniority to the rank of Colonel, with the single exception of Officers who were promoted for distinguished service by being made Queen's Aides-de-Camp and attaining the rank of Colonel, that was the sole exception. But in 1854 an alteration was made, and it was thought desirable, for the good of the public service, that Officers of the rank of Lieutenant-Colonel who were actually serving in Command of Regiments or on Staff appointments, and having that amount of responsibility, should have an advantage given to them over those Officers who, in the junior grades, had attained the Brevet rank of Lieutenant-Colonel. The term that was fixed first was three years' service as Regimental Lieutenant-Colonel; but this was considered so great an injustice by the Officers who had then attained the rank of Lieutenant-Colonel, that they memorialized the authorities, and through the efforts that were made by General Lindsay they succeeded in getting the Warrant of 1854 withdrawn, and a new one was issued.

29. (*Sir Charles Yorke.*) The question was referred to a Royal Commission?—Yes; and a new Warrant was issued. In the first place every existing Lieutenant-Colonel at the date when the rule was introduced was promoted by antedating his appointment and giving him the rank of full Colonel, and for the future the term was changed with regard to the rank of Lieutenant-Colonel in those qualifying posts, and was increased from three to five years. Then it was considered that Officers who had not yet attained the rank of Lieutenant-Colonel could not have any complaint to make against this new practice as being an injustice. I may mention that I was a sufferer myself under that change with a number of other Officers. I was one of several Officers who were promoted for service in the field during the Crimean War, and the result of the change was that I found that the promotion given me in 1855 was cancelled in 1858. It took place in 1858, while I was serving in India, and I found all of a sudden a number of Officers over whom I had been promoted put over my head again, so that I found myself in the same position in the Army, and as far from the rank of Major-General, as if I had been in bed ever since the day on which the Army went to the Crimea.

30. In the English Army, promotion up to the rank of Lieutenant-Colonel is Regimental?—Yes.

31. What violation of military principle is there in saying that you should not only have that unit, but that each distinct branch of the Army should constitute a unit for promotion above the rank of Colonel—that is to say, that in the Cavalry, Officers should rise to the rank of General under one system, and that in the Infantry or Artillery they should rise to the rank of General under another system?—I think there would be no reason why you should not do that with Officers who might now enter the Service, but after Officers have served for a considerable time in the Service, I think it is an injustice to lay down a rule that shall operate in favour of one particular class as against another.

32. But any Officer who has entered the Army since the year 1854, has entered the Service under the new system?—Yes; my remark does not apply to them.

33. With regard to Officers who remained in the Army after 1854, when the system of giving a certain number of appointments to the rank of General to different branches was adopted, every Officer took his chance, and it was supposed then that abstract justice was being done, was it not?—That that was the object I have no reason to doubt.

34. It was supposed to be doing abstract justice, but if in the working that system out afterwards the chances turned out in favour of one set of Officers more than of another, is that a ground for altering a whole system which was established as far back as 1854?—I think there is ground for reconsidering it, and, if it operates unjustly, to alter it, or to modify it.

35. Fifteen years are a long time to go back, when a system has been once established in the Army?—I think that in such a case when it is found to cause great injustice, there are very fair grounds for altering the system instead of continuing it.

36. Except in the case in which two Officers meet together on the field or in command, what is the practical evil, except a social one, which arises?—In the first place I must say that I think it is a mistake to use the word "social"; I think it is entirely a professional evil.

37. Except in cases where two Officer meet together on the field or in command is there any harm done at all?—Yes; the Indian Major-General would claim a command when one fell vacant, and he would think that he was unjustly treated if he did not get it, while the other Officer, originally his senior, would be told, when he applied for the same Command, that he was not qualified by the rank he held, being still only a Colonel. What I object to is this, that an Officer should be put in that position without the Crown exercising its power of selection, and that it should be done by rule. If any Officer, a Junior Colonel for example, was selected for a command, and made a Major-General because of his distinguished services, not the least complaint would be made: nor of the selection of Officers for every Division of an Army that goes abroad, or any other Command, as the selection would be made by the Crown on the advice of Her Majesty's Government. In such cases it is not the Commander-in-Chief who nominates, it is the responsible advisers of the Crown—the Cabinet. The Commander-in-Chief only recommends. All these selections are submitted to the Cabinet, and there is not the slightest objection made to them.

38. You say that one Officer might claim to be employed by reason of his rank, and that another Officer might lose a Command by reason of his not having sufficient rank; but suppose that an Officer of the English Army has suffered no injustice, but has attained the same rank and the same position which he would have attained if the amalgamation had not taken place, his position in that respect would not be altered; he would still be a Major-General, and the only injury that he would sustain, as I understand you, would be that some Officer from the other Army might be a Lieutenant-General when he was only a Major-General, and that some Officer might apply for a Command who might have a better chance of obtaining it than himself?—It is more than that. If the old system of Officers belonging to the East India Company having rank only Eastward of the Cape of Good Hope continued, no doubt the grievance would be diminished except in the case of Officers serving in India, or seeking for employment there; but now that the rank holds good all over the world, those Officers are, every one of them, liable to have a Command in England, or in Europe, in the event of our sending an Army over to the Continent, and they would take rank according to the dates of their commissions, those Officers being Junior Officers to the Queen's Officers who might be employed there. That I think would be a very grievous professional injury.

39. Practically the injury would be, as I understand you, the loss of a Command, or the being put under the command of an Officer who had been commanded by the same individual?—Yes; that is the practical injury; either that he would not be employed at all, or that he would be employed in an inferior position, while his Junior Officer was employed in a superior one, and that I look upon as the greatest possible grievance.

40. To what extent do you think that that is likely to take place during the next 20 years?—You will find that there are now a number of Officers in the List of Indian Officers who have been promoted to the rank of General Officers, and who have gained in that way from 10 to 12 years upon men of their own standing, and they would become, if no alteration is made, Lieutenant-Generals before those Colonels over whom they

have been unfairly promoted attain the rank of Major-General, and it would be followed naturally by the same practical injury, from the fact that those Officers would be employed in all the Commands as Major-Generals.

41. (*General Hancock.*) Are you not aware that many Lieutenant-Generals in the Queen's Service have superseded Major-Generals in the Indian Service over and over again?—No. I am not aware of that except when they have been selected by the Crown. If it is so, in my opinion it is very wrong, and ought to be and can be remedied. You referred just now to the practice formerly in vogue of appointing British Generals to the Chief Command of a Presidency, to the detriment or supersession of Indian Generals senior to him. That was done, probably, from public policy, in the same way as the appointment of Governor or Governor-General. The Home Government and Parliament did not allow the Court of Directors to nominate either the Governor or Commander-in-Chief.

42. (*General Alexander.*) I understand you to say that the supersession which now takes place, and which is complained of, is caused by a rule that has been laid down?—Yes.

43. What rule do you refer to?—It is by the rule of making separate Lists. It arises from having made separate Lists of promotion. There are now five or six different Lists of promotion under which officers rise, and it arises also from having carried out the amalgamation in an unfair way; from not having amalgamated the Officers all at once into one List with the Royal Army, when the so-called amalgamation was carried out.

44. Again it appears to me that your impression is that there was a dereliction of military principle in the Warrant of 1854; but the same incident might have happened in either List of Officers as happened in the Indian List, one was as liable to it as the other; therefore that would appear to me to operate against any dereliction of military principle. But the incident having occurred, I am not aware that any rule was made which necessarily involved supersession; it is merely an incident that occurred from an inducement being held out to Officers to retire. That inducement no longer exists, and of course the cause of complaint ceases with it?—I will endeavour to reply to one point contained in what you have stated, for it is not exactly a question. I think it is not competent, having regard to justice, for the Crown to offer retirements to one Branch of the Service, so as to bring an unfair amount of promotion to that Branch of the Service to the prejudice of others, and I think that that meets the whole of the question. It is not possible, without departing from justice, for the Crown to offer advantages to one Branch of the Service so as to bring about an unequal amount of promotion between it and other Branches of the Army.

45. (*President.*) Supposing that similar advantages as to retirement from the Service had been offered in the English Army, and you had accepted them while others had not, would that have altered the question as to the justice or injustice of what was done?—That is putting a hypothetical case which I think is not very likely to arise, but I suppose that a similar offer would produce similar results, at any rate no such offer has been made.

46. (*General Alexander.*) Can you give the Committee any idea how many Non-combatant Officers are affected, and how many Combatant Officers?—I have never gone into any calculation, nor considered the question of Non-combatant Officers, and when I say Non-combatant, I mean Officers who have permanently retired from the Service.

47. But all Non-combatant Officers are affected?—Half-pay Officers are not Non-combatant. I do not complain about Officers who have retired from the Service. I should regard those as Colonels in the English Army who had received the rank of Major-General as an honorary thing on retirement, and therefore Officers in the Indian Army who had retired and could not be employed again with the rank they had, would be quite immaterial to my case. I think it is competent for the Government to rectify the Warrant.

48. (*President.*) A statement has been furnished to the Committee by General Balfour. Have you any observations to make upon it?—It has only been this moment placed in my hands. I will read it, and make my reply in writing to such parts of it as require notice.

49. At the time when the new system of continuous promotion was established in 1854, was any complaint made in the Army of that being an injustice as compared with the former practice?—I do not think that any complaint was made. I think the tendency of Officers in the Royal Army has always been to be very long-suffering, they have never combined, or agitated upon these questions, whatever feeling there might be that it might tend to their disadvantage.

50. Was it not considered rather a boon to the Army to put them on a regular system of established right?—I think not.

51. Was it not putting them under a system of established right instead of being subject to mere casual Brevets?—No; it was known that the object and the effect of it was to reduce the number of General Officers. The casual Brevets were quite certain to come out every three or four years, and the aggregate promotion was better than now. I cannot imagine any one looking upon it as a boon to the Army.

(The Witness withdrew.)

Adjourned to Monday next, at 11 o'clock.

Monday, 27th September, 1869.

PRESENT

Sir WILLIAM M. JAMES, *President.*

Sir CHARLES YORKE.
Sir DUNCAN CAMERON.
General ALEXANDER.
General HANCOCK.

Colonel JOHN ADYE, R.A., examined.

52. (*President.*) Major-General Herbert having referred to you as an officer able to give the Committee much information upon the subject referred to them, if you have any observations to make, will you now be good enough to make them?—Yes; I wish to make a short statement to the Committee of the facts which have led to the present state of affairs as connected with the supersession of Colonels in the Royal Army. In former days, that is before 1854, all Colonels of Royal and Indian Lists were made Generals by periodical Brevets; the Colonels of both of a certain date being promoted in the same Gazette. Therefore there was no supersession, all being dealt with alike. There was an occasional exception to the above in favour of Colonels of the Indian Armies who in some instances received promotion by local rules; but this was met by giving Colonels of the Royal Army serving in India local rank; and as the system no longer exists, it does not now require consideration. In 1854 a great change was made, periodical Brevets being abolished, and a fixed establishment of Generals created at home for the Colonels in the Royal Infantry and Cavalry, a second for the Royal Artillery, and a third for the Royal Engineers. A fixed establishment was also created at the same time for all arms of the three Indian Armies in one; so that at home the promotion of Colonels to be

Generals began to run in three streams, whilst the Indian List was an entirely distinct one. I think it will at once be self evident that however carefully those separate establishments were adjusted at the outset, any accidental causes might quicken or retard promotion in one List as compared with the others; and therefore supersessions, to a slight extent, would be likely at all events to occur. It so happens that the Colonels in India obtained a great advantage in starting; when their fixed establishment was settled in 1854, they had not a sufficient number of Generals to complete it, consequently no less than 95 of their Colonels were promoted at once. This had the additional advantage of reducing the proportion of Colonels to Generals. On the other hand, the Royal List suffered from the opposite cause; that is, they had a redundancy of Generals, and therefore had to check promotion to absorb them. A very few years afterwards a second piece of good fortune befel the Colonels in India. After the Mutiny, in reorganizing the Armies, a number of old Colonels received enhanced pensions and retired, and this again reduced the numbers in that rank as compared with the fixed establishment of Generals. This diminution in the number of Colonels on the Indian List as compared with their establishment of Generals, appears to me to be the real key to the supersessions under which the Royal Colonels are now, and have been for some few years, suffering, and unless altered, the evil will continue for some years. Once a Colonel in India, the run through that rank is now very rapid, being only six years, whereas in the Royal Lists Colonels of 12 years standing are still unpromoted. In 1861 a new element of promotion was introduced in India; namely, promotion by length of service, and all officers of the Armies of India now rise to be Colonels in 31 years. This of itself is a matter requiring careful consideration, because if it is quicker than the average rate in the Royal Army, the Colonels in the latter will find themselves superseded on arriving at the rank of Colonel as well as in their after promotion to General; there being two phases in an officer's life—I mean his Regimental rise and his Army rise. In 1862 a Royal Warrant was issued laying down that all Colonels of the Royal and Indian Cavalry and Infantry promoted to that rank after the 17th of February, 1861, should be placed on one list, and should be promoted to the rank of General according to vacancies in the amalgamated List. Had that rule been adhered to—and to me it seems a just one—all supersession of Colonels in either Service would have been at an end; at all events from that date. Then with regard to the Royal Artillery and the Engineers, the old Royal Artillery and Engineers had had fixed establishments of Generals of their own since 1854, and by the Warrant of 1862 similar establishments were created for the corps of Indian Artillery and Indian Engineers respectively; and it was further directed that after a certain date the Indian Artillery List should become one with the Royal, the Colonels of all four Artillery Corps to form one List and to be promoted in succession. It was also directed that the Engineers should be dealt with in a similar manner. In 1864 the whole of the above arrangements were cancelled in consequence of Lord Cranworth's Commission; and the following were substituted:—first of all, Royal Colonels of Cavalry and Infantry were to be promoted according to vacancies in a fixed establishment of their own of General Officers; secondly, the old Royal Artillery Colonels were to be promoted in their List; thirdly, the old Royal Engineers were to be promoted in their List; fourthly, the Indian Colonels of Infantry and Cavalry were to be promoted in their List; fifthly, the three regiments of Indian Artillery were to be promoted in their List; and sixthly, the three regiments of Indian Engineers were to be promoted in their List. It is self evident that under any circumstances promotion in those six Lists must run unequally. The three Indian Lists I may say were ordered to run as one until March 1868, and owing to the before-mentioned paucity of Colonels as compared with the establishment of Generals in India, the promotion of all their Colonels was exceedingly rapid, and they superseded in large numbers the Colonels of the three Royal Lists. Then in March 1868 the Indian Artillery and the Engineers, that is, Nos. 5 and 6, were separated, as ordered in 1864. From that date, therefore, these latter, that is, the Indian Artillery and Engineers, have ceased to enjoy the enhanced promotions, and having a superabundance of Generals at the time of the separation, their promotion is for the present retarded, and they are absorbing their excess. However, they are still far in front of those at home. The Colonels of the Indian Infantry and Cavalry (which I call List No. 4), left all to themselves, are now enjoying the full benefits hitherto shared by their comrades of the Indian Artillery and Engineers, and consequently they are rapidly superseding the Colonels of every other List, and of every other branch in the Service. At the present time the case stands as follows, or rather it did about two months ago; it is probable that it may have altered in a trifling degree since; but the case stands roughly as follows:—the first Colonel of List No. 1, that is, of Royal Cavalry and Infantry, is a Colonel of September 1857; the first Colonel of the second List, that is, of the old Royal Artillery, is a Colonel of November 1857; the first of the third List, that is, the old Royal Engineers, is a Colonel of December 1857; the first Colonel of the Indian List of Infantry and Cavalry (No. 4), is a Colonel of June 1863; the first Colonel of the Indian Artillery (No. 5) is a Colonel of February 1861; the first Colonel of the Indian Royal Engineers (No. 6), is a Colonel of March 1861. It will, I think, be seen that accidental causes, combined with one-sided and partial legislation, have tended of late years to give the Colonels of the Indian Armies great advantages over those in the Royal Service. Even were those advantages merely local and confined to India, they would be serious enough, but as the rank of Officers of the Indian Armies is now valid all over the world, the supersessions have a very prejudicial result on the Colonels in the Royal Service.

I would ask, before I go on, whether the Committee wish me to make any suggestions as to how this state of things can, in my opinion, be remedied?

53. (*President.*) The Committee will be very happy to receive any suggestions from you?—When a measure of this kind has been going on for some time, so that a large number of Officers have been injuriously affected, and others are about to be so, it is difficult to provide an absolute remedy, desirable as such a remedy may be, because there are so many interests involved, and because radical changes are apt to lead to further complications. It is of course possible to put an end to the present difficulty, either by cancelling the promotions of the Officers on the Indian Lists, or by promoting at once all the superseded Colonels of the Royal Army; but both of those alternatives present grave objections of various kinds. It does not, however, appear to me very difficult to draw up certain Rules which, without causing expense, adding to establishments, or inflicting injury on any one, would restore the Royal Generals to their proper positions on the List, would gradually do away with the supersessions of the Colonels, and would prevent such supersessions in future. The measures I would propose are as follows:—First, restore all Major-Generals of the Royal Army, who have been superseded, to their proper position by ante-dating them according to the dates of their Colonelcies; second, stop all promotion of Indian Colonels for the present, and whenever a vacancy occurs, either in the Royal or Indian Establishment of Generals, promote the senior Colonel of either Army, and then give him his correct date as a Major-General.

54. (*Sir Charles Yorke.*) But what would you consider to be the correct date?—The date of his Colonelcy; back-date him to where he would have been as a Colonel. Third, amalgamate the Royal and Indian Lists of Infantry and Cavalry Colonels, as arranged in 1862, and form one establishment, and also their Generals; fourth, amalgamate the Artillery Lists and the Engineers' Lists respectively, as arranged in 1862.

There is one short additional remark that I wish to make as to the Guarantee clause. I believe that it

guarantees that the Officers of the Indian Armies shall have all the rights and privileges as to promotion which they had in the days of the East India Company.

55. (*President.*) That is the substance of it, as if they had continued to serve the East India Company?—With regard to the intention of that clause or the sense of that clause, I would say in the first place, that I believe it will not be contested that either the Crown or the East India Company could augment or reduce their Army as they thought proper. Again, with regard to changes in Rules and Regulations as to the promotion of Officers, I would observe that such changes were made in the days of the East India Company, and therefore they can be made now. I would observe, for instance, that the system of doing away with periodical Brevets and establishing a fixed List of General Officers was done in those days Therefore I presume that such changes can be made after the Crown has assumed the government as were made in the days of the East India Company. As to changes made since the Crown has assumed charge of the government, I may state that several have been made. The first was made in 1862, in which the Lists of Colonels and Generals were ordered to be amalgamated with the Royal; secondly, there was a transfer of certain Generals from the Indian Lists to the Royal Lists when the Indian European Regiments were transferred to the Queen's Army—that was another change; thirdly, the cancelling of the order of 1862 and re-establishing a separation of the Royal and Indian Colonels was another change. Then there has been another very vital change made as regards the establishment of Generals and Colonels in India—a final one—and that was the separation of the Indian Artillery and Engineer Colonels from the Indian Cavalry and Infantry Colonels. This last has been a very serious matter, and has been the final cause of the rapid promotion of the Indian Cavalry and Infantry Colonels; in fact, that is the final cause which has made one list run very fast and all the others very slow. I adduce these facts to show that before the East India Company were abolished, changes were made in the Rules regulating the promotion of Officers, and they have been made since.

56. No doubt in point of Royal Prerogative, and in point of power, the East India Company and the Crown had power to reduce their Officers as they liked. The East India Company had the same power to do it as the Crown; but what do you consider was guaranteed by the guarantee which has been referred to, if changes might be made by either party afterwards?—I will answer that question if you will allow me to see for a moment Lord Cranworth's Report [the Report was handed to Witness]. This is the paragraph in the Report of Lord Cranworth's Commission which I think will answer the question of the President. "The "question is, 'What on that assumption is the proper "'interpretation to be put on the language of the Act?' "It could not have been intended to prevent the "Crown if, in the interests of India and of the Empire "at large, it should deem it necessary, from reducing "the numbers of the Indian Army, or altering its or-"ganization; it would have been in the power of the "Company to make such reductions and changes, and "a similar power was transferred to the Crown. All "we can understand Parliament to have guaranteed to "the Officers is that, in making any such reductions, "their interests should as little as possible be interfered "with, and that in any change of organization, the Crown "should, as no doubt the Company would have done, "preserve all the rules as to pay, pensions, allowances, "and privileges, and the like advantages as regards "promotion and otherwise which existed at the time "the Act was passed; or if in any case that should be "impossible, then that some counterbalancing benefit "should be given to compensate any advantage which "it might be impossible to retain."

There is one additional observation, if you will allow me, that I should like to add. It is sometimes argued that promotion of Officers of both Armies to the rank of General should be regulated, not by the dates of their Colonel's Commissions respectively, but by those of their original Commissions. But I would say that if this is to hold good for the two Armies, it is equally cogent as regards the Colonels of either Army amongst themselves; and, therefore, before any promotions could take place, the Colonels of both Armies would have to be entirely readjusted; that is those who had risen to be Colonels quickly, either for gallant services, from quick regimental promotion, or other causes, would have to be at once deposed and placed far down on the lists. It would also follow, I think, that if Colonels and Generals are to be equalized and made uniform in this way, Officers of other ranks would equally demand the same rule, and the result would be that all Officers of every rank would have to be placed on long lists for promotion, which would be then uniform in every respect. It is hardly necessary to point out that this is practically impossible, that it would be another cause of confusion, and would put an end to all ambition and all hope of rising quickly in the Army. The real fact seems to be, that the promotion of Officers has two distinct epochs,—the first Regimental from the first entry into the Service to the command of a Regiment; the second, Army Rank, from being made a Field Officer to being made a General. The Regimental arrangements of each Corps should be so far uniform that the average promotion should be fairly equal; but even then wars, sickly seasons, augmentations, reductions, or other unforeseen and exceptional causes will render promotion in one Corps quicker than in another. This result must always take place more or less, nor indeed does it seem desirable that it should be otherwise. But in any case any inequality in Regimental arrangements should be rectified by alteration in that branch of promotion, and cannot properly, in my opinion, be adjusted by altering the system of promotion from the rank of Colonel to the rank of General.

57. (*General Alexander.*) You stated, I think, that after the Mutiny in India the quicker promotion of Colonels by retirements in the Indian Army was the key to the grievance you are now laying before the Committee. I presume you alluded to the quicker promotion caused by the retirement of Colonels who took superior pensions, and retired with the given rank of Major-Generals?—Yes.

58. If an unusual promotion by deaths had taken place, or supersession in consequence of deaths in an extraordinary degree had taken place, would you have considered that a grievance?—No. If you please, I can give you one or two facts to show you the great and sudden diminution of Colonels as compared with Generals in the two instances I have spoken of. I stated that after a fixed establishment of General Officers was created for the Indian Army in 1854, a very sudden reduction took place in the number of Colonels, and a great augmentation in the number of Generals; for instance, just before the establishment of a fixed number of General Officers for the Indian Army the numbers were as follows:—In July 1854, after the great Brevet, there were 132 Generals and 160 Colonels; in May, 1855, after the establishment of the General Officers, there were 223 Generals and only 59 Colonels. I said that there was a second instance; that was when a large number of old Colonels retired on enhanced pensions, and then the numbers again dropped suddenly. I will therefore now take the numbers just before those pensions were granted, and just afterwards. In January 1861 the number of Generals was 218, and the number of Colonels 214—even that is a very small number of Colonels; but in July 1862 the number of Generals was 220, and the number of Colonels was only 119. I think that will show the sudden way in which, twice running, the number of Colonels of the Indian Army dwindled down; and, if you will allow me, I will point out the last thing which happened in March 1868, when the Indian Infantry and Cavalry Colonels were separated from the Artillery. January 1869, Infantry and Cavalry, 173 Generals, 81 Colonels; Indian Artillery, 32 Generals, 66 Colonels; Indian Engineers, 12 Generals, 29

Colonels, and 85 Colonels of the Staff Corps, which I have not gone into; they had not yet begun to be made Generals.

59. (*President.*) There are 85 Indian Colonels who have been removed from a present chance of promotion by being transferred to the Staff Corps, and the whole number of Colonels has been diminished?—Yes. Those will come in for promotion in the final Amalgamated List hereafter.

60. (*General Alexander.*) Have you considered that those retired Colonels who obtained rapid promotion by taking increased pensions are *hors de service* entirely, and never can come into competition with or supersede any of the Officers whom you are now representing?—No; those Officers who retired are not the Officers I am arguing about. It is a fact that they retired, and they left those who remained in a very advantageous position.

61. (*President.*) You mean, do you not, that the advantage has gone for the benefit of only one branch of the Indian Army?—Yes; and practically I think that it amounts to a very serious grievance, because it was such a large retirement of one rank, which was not contemplated when the fixed establishment of General Officers was laid down for the two Armies respectively, and no such clearing out or diminution of the List of Colonels of the Royal Army has taken place.

62. Supposing a Colonel were minded to go out of the Service altogether, might he not retire with the honorary rank of Major-General?—The inducements to retire in the Cavalry and Infantry are so slight that I do not think many Officers take them. In the Artillery they are rather greater, and we do take them in larger numbers; it is our only hope of keeping up with the Cavalry and Infantry.

63. There is the same principle, only it is not carried to the same extent?—Yes; but an exceptional and abnormal state of affairs arose after the Mutiny in India, and found a great number of old Colonels whose regiments had left them. In reorganizing the Army, it was not considered advisable to revert to former arrangements, and Regiments of Infantry and Cavalry were organized with young Officers, about six per Regiment. Therefore the old Colonels were, to speak respectfully of them, rather in the way, and they were offered enhanced pensions to induce them to go; and very just it was, no doubt, at the time, but its effect on the Royal Army has been very unfortunate.

64. It has not deprived the Royal Army of a single step of advancement, but has only put them in a position of relative inferiority?—Quite so.

65. It is merely relative, not positive?—Yes; but when those two Warrants were issued in 1854, laying down fixed establishments for the Royal and Indian Army, it was on the understanding that the two were fixed relatively to each other in what was considered a fair and equitable proportion, and if you destroy the proportion of one you injure the interests of the other.

66. (*General Alexander.*) Do you consider the Warrant of 1854 an equitable one?—I have not been able to ascertain precisely on what conditions that establishment was laid down, but I rather think, if it is investigated, it will be found that the Royal establishment of Generals was fixed on too low a scale; that is to say, I think it probable that the large number of Officers on half-pay then were not considered, in calculating the establishment; because I think if they had been, the proportion of General Officers for the Royal Army would have been a larger one. There were about 2,699 Officers on half-pay in 1854, and those Officers, according to the Rules of the Royal Army, had, many of them, a right to rise to the rank of General Officers.

67. (*Sir Charles Yorke.*) If they should be employed again, or if they have completed the qualifying period of service?—Yes. Before the Warrant of 1854, I believe, a great body of them practically did rise to be General Officers.

68. (*President.*) The general mode in which a half-pay Officer came again into active service was by exchanging with another Officer, or by purchase, was it not?—Not always. No Field Officer, I believe, of the Royal Army now is allowed to hold a Staff appointment unless he is on half-pay, and service in his Staff appointment qualifies him for the rank of General.

69. When the establishment of General Officers was made in 1854, there were not merely differences between the two Armies, but differences between the arms of the same Service; and a certain number of Generals was allotted to the Artillery and Engineers?—Yes, in England.

70. In order that they might not be put into the common stream of promotion with the Officers of other Corps; and was not the reason why that was done this,—that the men in the non-purchase Corps would in all probability have to serve a greater number of years on the average than the men in the purchase Corps, or is there any reason why there was a fixed establishment of Generals given to the non-purchase Corps, except for the purpose of making some equalization?—It was no doubt done with a view to give the Royal Artillery and Engineers more certainty as to their promotion to the rank of General. For many years during the long peace, the promotion of Officers in the Royal Artillery and Engineers was very slow, and they were so long in attaining the rank of Colonel, that they were very old men before they became Generals. No doubt to a certain extent it was also the case among the Cavalry and Infantry during the long peace, but not to the same extent.

71. Was not that the reason why there were three distinct lines of promotion laid down from the rank of Colonel upwards?—Yes. I may mention that in 1854, I believe, the junior Colonel of the Royal Artillery was 65 years old. In page 21, paragraph 97, of the Report of the Royal Commission of 1854, there is this passage: "There is not now in the Royal Artillery "one Full-pay Colonel under 65, and very few Lieu-"tenant-Colonels under 55, while in the rest of the "Army, during the period intervening between 1838 "and 1854, the age of the Field Officers is but slightly "increased. In the Ordnance Corps, taking the 10 "senior Colonels in each year, the increase is not less "than seven years in the Artillery, and six in the "Engineers." And in paragraph 98 "Again in the "Brevet of 1841, no Colonel in the Royal Artillery "promoted to be a Major-General was above 70 years "old; in the Brevet of 1851, there was no Colonel "promoted who was under 70."

72. (*General Alexander.*) You have stated, I think, that at present in the Artillery Corps there is a system by which you can obtain by your own internal arrangements more rapid promotion?—Not internal arrangements; by Government arrangements.

73. If very rapid and unexpected promotion were to take place in your Corps, should you consider that a reason for re-adjusting the arrangements now in force, so as to bring up the Line to an equality with you?—I am quite sure that the Colonels of the Cavalry and Infantry would very soon say that that was a reason for re-adjusting the balance, and I think that they would be very right in saying so; but our promotions of the kind I have alluded to have been favourable to us to a certain degree, but only to a limited degree; otherwise no doubt complaints would have arisen. I may say that promotion has so far been favourable, owing to retiring allowances being given to us, and owing to our establishment of Generals being in a fair and just proportion, that our promotion from Colonel to General since we have had a separate List, has been rather better than theirs, we had rather beaten them until now; the balance now is going the other way. You will find that the last Colonel promoted in the Royal List of Infantry and Cavalry, is junior to our senior Colonel, but only a little; the balance is just turning.

74. You say that if extraordinary promotion took place in your corps, the Officers of the Line would say that there ought to be a re-adjustment?—Yes.

75. Speaking from your experience as an Officer, if these adjustments are likely to become necessary, will

they not keep the Officers of the Army in a continually unsettled state as to the promotion of the senior Officers?—Yes, no doubt of it.

76. You have now had an exceptional run of promotion, and it has come to an end, but does that differ in principle from the run that there has been in the Indian Army?—We have had a run in the Royal Army, in the Artillery, as well as in the Infantry and Cavalry, in consequence of the augmentations caused by the Crimean War, and a very fair cause for rapid promotion it was; by the casualties of the Crimean War, and by the fact that when the Crimean War broke out, the Officers in the upper ranks of the Army had become very old, and therefore there was a great move in the Army just before the Crimean War, or about that time.

77. (*President.*) That was before 1854?—It was beginning then.

78. All the effect of the Crimean War such as it was tended to the benefit of the Royal Army, and not at all for the benefit of the Indian Army?—Yes.

79. Promotion was given by reason of service in the field?—Yes, and augmentations and casualties.

80. The well-earned rewards of merit in the field?—Yes.

81. Have you considered this point, that the Indian Army is officered by men always on active service?—No, they are not always on active service.

82. They have always to serve in India, and spend their lives there on foreign service?—Yes.

83. And foreign service in a very bad climate, in a state of exile?—Yes.

84. Whereas the English Army is officered by men who take their turn in foreign service and home service; they are sometimes at home, sometimes in a Colony, and sometimes in India, serving in different parts of the world?—I think you will find that the Royal Army have now not quite five years at home, to ten years abroad. They have to go to many worse climates than that of India, and where they get much worse pay. But at the same time I m quite prepared to admit that the Indian Army, upon the re-organization, which took place after the Mutiny, deserved the very fairest treatment that could be given to them, and I do not think that the Officers of the Royal Army would ever grudge them that; but an accidental cause has given one set of Officers a tremendous run over all the other Lists.

85. As I understand you, your view is that, even assuming the Warrant of 1854 to have been a good one, the intention being to apportion things fairly, it did not contemplate such an exceptional discrepancy as that which was produced by the sudden retirement of so many Officers from one Army?—That was one chief cause, but also the Warrant did not contemplate that in 1868 the Infantry and Cavalry Colonels in India should be separated from the Indian Artillery and Engineers, giving the Infantry and Cavalry an enormous advantage over the Indian Artillery and Engineers, who are now suffering severely in consequence.

86. That was a wrong done to the Indian Artillery and Engineers, and not to the Royal Army?—It was a wrong done absolutely to the Indian Artillery and Engineers, but it was incidentally a wrong done to the Royal Army, because it gave one branch, that is, the Colonels of the Indian Infantry and Cavalry, an enormous run of promotion over the heads of every other branch of both Armies.

[The following paper was handed in.]

RETURN showing the Number of General Officers and of Colonels of the Indian Armies at various periods since 1854.

Period.	Generals.	Lieutenant-Generals.	Major-Generals.	Total Generals.	Colonels.	Remarks.
Jan., 1854	1	83	..	84	153	Before the Brevet of June 1854.
July, „	25	57	50	132	160	After the Brevet of June 1854.
May, 1855	25	52	146	223	59	After the fixed Establishment had been created.
1859	25	51	145	221	201	After the Warrant of November 1854, creating Colonels in 3 years, had come into operation.
Jan., 1861	26	50	142	218	214	
July, 1862	25	50	145	220	119	Periods during which Colonels had been permitted to retire on enhanced pensions.
Jan., 1863	24	42	139	205	118	
„ 1865	25	43	141	209	125	After the order of amalgamation with the Royal Lists had been cancelled.
„ 1869	19	41	113	173	81	Infantry and Cavalry.
„ „	4	8	20	32	66	Artillery.
„ „	2	4	6	12	29	Engineers.
	..	..	..	..	85	Staff Corps.
1869. Totals ..	25	53	139	217	261	

(The witness withdrew.)

Major-General GEORGE BALFOUR, examined.

87. (*President.*) You have been good enough to make some notes of what I may call the case of Sir Percy Herbert, and you have drawn up a paper which is now before the Committee?—Yes; but there is one thing that I would ask of the Committee, and that is, that I may have an opportunity to go very carefully over it again, because it was hastily put together, and if there should be anything in it of an objectionable character, I should like very much to take it out; not to alter the facts.

88. Is there anything that you would like to add, and which you think it might be useful for the Com-

mittee to know?—I have just spoken to Colonel Adye, and he has permitted me to say, that if you will allow him to co-operate with me in such a manner as to bring out the facts more correctly, I shall be only too happy, because it is information of an accurate nature that you require. If we differ, the Committee will see where the difference arises, but I should like to have time to consider the subject. I may just mention one slight thing to show how important accuracy is. Among the remarks that Colonel Adye made, he said that the number of Colonels in the Indian Army, after the fixed establishment of General Officers was given in 1854, was greatly diminished in a subsequent year. That is true in fact, as appears upon reference to the Army List, which Colonel Adye must have consulted, but it arose from a blunder made in Calcutta, and which the members of this Committee will at once comprehend. They there forgot that for every Colonel promoted, of the 95 Generals, to complete the establishment of 220 Generals there was a Lieutenant-Colonel, a Major, and a Captain, also to be promoted each a step in rank; but there was a misapprehension in Calcutta in carrying out the new Regulations, and the consequence was that for nearly two years the number of Colonels of the Indian Army fell far below the real number which they were entitled to have. The Army Lists show the deficiency as Colonel Adye rightly states.

89. Will you be good enough to state whether the Reports of 1854 and 1858, or either of them, show how the calculations as to the number of Officers were arrived at?—I will read the 76th paragraph of the Report of 1854.—"The Royal Artillery consists of 692 Officers "on full-pay; the Royal Engineers of 336 full-pay "Officers: the two Corps therefore are in the proportion "of about one to five or one to six of the whole Army." That is the Report of 1854. I will also now refer to the 52nd paragraph of the Report of 1858, wherein it is shown that there were 5,585 Officers of the Infantry and Cavalry, including the Guards, when the 234 Generals were fixed. These comprised a number of Officers on full-pay, exclusive of Colonels of Regiments. By the proportions named in the Report of 1854, as there were 1,028 Officers of the Artillery and Engineers, for whom 48 Generals were allotted, and as the Infantry and Cavalry then bore to that number the proportion of five to one, according, therefore, to the Report of 1854, there were 5,140 Officers of Infantry and Cavalry for whom the 234 Generals were allotted. There was therefore a difference between the two calculations in the Reports of 1854 and 1858 of 445 Officers. On looking over the Returns of the Army, I could not make out more than 4,833. However, the Commissioners of 1858, in consequence of the claim of the Artillery to receive a greater number of Generals than the 32 allotted to that corps, refused to recommend an increase, but advised the Crown to increase the Generals of the Infantry and Cavalry from 234 to 260; that was placing them on the same footing as the Artillery in 1854, and that equality came as nearly as possible to one General Officer to 21 Officers.

90. Twenty-one combatant Officers?—Yes.

91. On full-pay?—Yes; I may mention this as Colonel Adye did also mention it. The number of half-pay Retired Officers of the Royal Army in 1854 is shown at page 6 of the Report of 1854 to have been 2,699 half-pay and retired full-pay. It is exceedingly difficult, as the Members of this Committee perfectly well know, ever to ascertain what number of those Officers on half-pay are not entitled to be advanced to the grade of General, in consequence, as has been previously observed, of want of service as Field Officers. I have never seen any separation as to the number of those under this category who stood in the way of their brother Officers for a rise to the rank of General Officer.

92. Could any Officer on half-pay come into active service so as to compete for promotion, without some other Officer going out on half-pay?—Yes; in many instances.

93. Generally speaking, does not an Officer on half-pay come upon full-pay, by some other Officer on full-pay going out, with whom he exchanges?—No; I may explain, in order to show you the complications in the Service, which are almost beyond belief. There is a sort of Regiment existing in the Home Army, which is called the Unattached List, and that comprises a very large number indeed of Field Officers. The last time that I looked at the List, I am sure that there were upwards of 200 Lieutenant-Colonels, and that List is entirely independent and separate from the Regimental Lists. Those Officers are, strictly speaking, although on half-pay in many respects a Regiment in themselves, and those Officers rise to the rank of General as a matter of course in regular succession.

94. (*Sir Charles Yorke.*) That is, if they have completed their qualifying service?—Yes; whatever the qualifying period may be for the time being.

95. (*General Alexander.*) Must they not come from half-pay into active service in order to complete their periods of service?—Yes; if they have not already completed them before going to half-pay.

96. (*President.*) Still, to some extent, when an Officer upon half pay comes into a Regiment, there must be an Officer on full-pay who goes away from the Regiment? Certainly; on certain occasions, however, Officers are brought in from half-pay to fill up vacancies, and it is done in this wise. Of late, on Regiments coming home from India and the Colonies, Officers have been placed on half-pay by reason of a reduction in the establishments of the Regiments. Then those Officers have by degrees been brought in from half-pay to fill vacancies in the establishments of other Regiments going out to India or the Colonies, in consequence of the augmentation which takes place when Regiments are so ordered.

97. Then a Regiment going out has a greater number of Officers than a Regiment at home?—Yes.

98. (*General Hancock.*) What was the number of Indian Officers in 1854, and what was the proportion of Generals allowed to those Indian Officers in 1854?—The number, as far as I have been able to calculate it, will be found in the Report which General Jamieson and myself made in 1860 on the proposed organization of the Indian Army, which was laid before the Government of India; you will find stated there the exact number of Officers in the various branches of the Service, and the total number was as nearly as possible between 5,300 and 5,400.

99. (*President*) Does there appear in the two Reports before you any reference to those numbers?—The Reports of the Commissioners of 1854 and 1858 made no mention whatever, either directly or indirectly, of the Indian Army.

100 Can you tell the Committee how the number of General Officers that was fixed for the Indian Army was arrived at?—It is a remarkable fact that there is less information given than in any published records or correspondence that I have ever seen, in connection with the establishment of Generals fixed for the Indian Army in 1854. The bare letter that came out to India, your two Indian Colleagues will tell you, positively contained no details, it merely conveyed the announcement that 220 General Officers had been granted to the Indian Army, but no communication was made as to what data were used in arriving at that number.

101. (*General Alexander.*) Can you give the Committee the relative proportions between the Officers in the two Armies?—The proportion of the Generals to combatant Officers in the old Royal Artillery and old Royal Engineers was exactly one General to 21 combatant Officers.

102. (*President.*) I presume you use the word "combatant" to exclude the half-pay Officers?—Yes; to exclude the half-pay Officers, and to exclude the Medical Officers as well. I may remark here that the half-pay Officers of the Royal Artillery do not stand in the way of promotion, in any shape or form, of the Officers on full pay. Whatever interruption might exist in the Infantry and Cavalry as to their promotion, occasioned by the half-pay Officers, there was no such interruption in the rise of the Engineers and Artillery Officers: that proportion of one combatant Officer to 21 Officers stands fast. In the Indian Army you will find, as

nearly as possible, that there was one General Officer given to about 24 combatant Officers.

103. (*General Alexander.*) Do you mean in the Engineers and Artillery?—No; in the whole Indian Army. There was an establishment given for the entire Indian Army; not for any branches in particular, but for all Officers and all branches, to rise to the rank of General in succession by seniority.

104. Can you give us any similar calculation as regards the Royal Army?—In 1858, when the Promotion Commissioners recommended an increase of General Officers to the Infantry and Cavalry of the British Army, by giving 260 General Officers, they took as the total number 5 585 Officers, that is as nearly as possible one General to 21 Officers.

105. Am I right in supposing that you have stated that in the Royal Artillery and Engineers the proportion was one General to 21 Officers?—Yes.

106. And in the whole Indian Army the proportion was one General to 24 Officers?—Yes.

107. What was the proportion in the whole British Army of Generals to Officers: you have only given it in the Ordnance Departments?—I have also given it you in respect to the Infantry and Cavalry; one to 21, would, I think, be the average in the whole English Army, according to the figures I have given.

108. Throughout the whole Army, including Infantry and Cavalry, Artillery, and Engineers?—Yes; that is, not including, as to the Line, the Half-pay Officers and Retired Full-pay Officers.

109. (*President.*) Is there any mode of approximately ascertaining what the proportion would have been in the Army—it is in fact 21—if a proper allowance had been made for the Officers on half pay at that time?—I have stated before that 2,699 Officers were the number on half and retired full-pay, but those comprise Officers of all grades. Many of them never could attain the rank of Lieutenant-Colonel, and therefore never could be promoted; and of course those numbers must be diminished very largely to bring them within the scale of the rank of Lieutenant-Colonel and Colonel to impede the rise of their brother Officers.

110. (*General Hancock.*) Do you include men who have sold their commissions?—No; those are out of the question: it is merely the half-pay and the retired full-pay Officers.

111. (*President.*) Taking the practical effect of the Half-pay List, it would not have a very material effect upon the proportion?—I think not.

112. You have stated that the Half-pay Officers of the Artillery did not apply to the case?—Not at all; they are advanced, but they are advanced only in rank, the Junior Officers to them also rising in succession; but they do not impede the rise of the others.

113. Therefore they stood upon the same footing as the Indian Army generally?—Yes. If the Committee desire to know something about the retirements of the Indian Army, I think I shall be able to furnish them with some information.

114. By adding the number of the Half-pay Officers to the British Cavalry and Infantry, can you tell us the proportion then?—There are two calculations as to the numbers which you can obtain from the Reports of 1854 and 1858. I mean the Reports on Promotion of those years. According to the calculation in the Report of 1854, the Infantry and Cavalry being five times more numerous than the Ordnance Corps, there were 5,140 Officers on full-pay, and 390 Field Officers on half-pay who might have taken their share of promotions, the total being 5,530. Dividing that number by 234, the General Officers allowed in 1854, the average is as nearly as possible one General Officer to 23 Officers and a half; but in 1858, as the General Officers for the Infantry and Cavalry were increased to 250, then the proportion is, as nearly as possible, one General to 21 combatant Officers.

115. (*Sir Charles Yorke.*) In 1858 there was a very large increase made to the extent of 28 battalions; have you taken that into your consideration?—I will answer that in this way. The question that was before the Commission of 1858, was an appeal from the Ordnance Corps to the Government, in consequence of the very large increase of Officers made to the Artillery and Engineers since 1854; to the extent of nearly 50 per cent. They therefore asked that the 48 General Officers allowed for the 1,028 Officers in 1854 should be considerably augmented, and the Commission of 1858 reported against that alteration. But in consequence of this question being mooted by the Officers of the Ordnance Corps, the Commissioners of 1858 seem to have revised the calculations made in 1854, and then for the first time gave the total number of Officers for which General Officers ought to have been given, and they then advised an increase in the number of General Officers for the Infantry and Cavalry, having reference to the establishment in 1854, though only given in 1858.

116. (*President.*) Does that include the Officers of the extra battalions?—No; because they refused to give to the Artillery the additional General Officers they had asked for, to meet the increase of Officers to that branch subsequent to 1854. The Artillery had likewise, in common with the Infantry and Cavalry of the Army, been very largely increased. I may also explain that between 1854 and 1859, when the Government of India was transferred to the Crown, there was an increase of upwards of 500 Officers to the Indian Army: so that at the date when the Queen took over the government of India, there were 5,968 Officers of the Indian Army as against 5,400 in 1854, so that the increases had taken place throughout the whole branches of the public service in different parts of the world. But as far as I can understand from those two Reports, the calculations of General Officers to combatant Officers were all made with reference to the establishments as they stood in the beginning of 1854.

117. That was taken as the basis?—Yes.

118. Does not the Report of 1858 give the number of the Line Officers on which the calculation is made of that year, as 5,585?—It is of great importance that you should read carefully and compare the calculations, and compare the reasoning of the Commissioners of 1858 with the Report of 1854. The argument of the Commissioners of 1858 was all based upon the appeal of the Artillery for an additional number of Officers, and therefore the bias, if I may be excused for using the word, in this Report of 1858 is evidently at variance with the claim of the Artillery, and from the whole their reasoning it is quite clear that they were hostile to the claim made by the Ordnance Corps. Therefore in taking 5,585 officers, according to the showing of the 1858 Commissioners, and dividing them by 260 General Officers which they then gave, that gives, as nearly as possible, one General Officer to 21½ combatant Officers.

119. Will you add the Half-pay Officers to that?—Yes; adding, however, the 390 Half-pay Officers to the 5,585 Full-pay Officers, that gives, as nearly as possible, one General Officer to 23 combatant Officers. But I again submit that we have no proof that the 390 Field Officers were all qualified for promotion. Next there is a distinct statement in the Report of 1854 that the Infantry and Cavalry were five times more numerous than the Ordnance Corps, which would give a strength of 5,140 Officers, and seeing the great difference between the calculations of 1854 and 1858, I am inclined to rely more upon the numbers in the Report of 1854 than I am upon the numbers in the Report of 1858. Moreover, I would also say, so far as the documents at my disposal could give it me in former years, that I never could find out even 5 000 Officers as the number of combatant Officers on full-pay belonging to the Infantry and Cavalry of the British Army.

(The Witness withdrew).

Adjourned till Monday next at 11 o'clock.

Monday, 4th October, 1869.

PRESENT:

Sir WILLIAM M. JAMES, *President.*

Sir CHARLES YORKE. | General ALEXANDER.
Sir DUNCAN CAMERON. | General HANCOCK.

Major-General GEORGE BALFOUR, further examined.

120. (*President.*) You were kind enough to say on the last occasion that you would look over the papers which had been put in, and see whether there was anything further that you thought it advisable to communicate to the Committee?—Yes; I said that it would give me great pleasure, in conjunction with Colonel Adye, to go over the papers and the evidence; and since the last meeting of the Committee we have consulted together. But in consequence of my absence at Aldershot, on Saturday last, and the printing not being finished, I have not been able to avail myself of Colonel Adye's advice and assistance to the extent that I could have wished, and I still hope that the Committee will allow us to confer together, as Colonel Adye will hear my evidence to-day, and see it afterwards in print. It is very desirable that where we differ on points of fact, he should have an opportunity of setting me right; and if the Committee will permit some machinery to be employed for that purpose, I think that we shall be able to agree upon the different points—matters of opinion will remain as they are.

121. (*President.*) Colonel Adye can hand in to the Committee a memorandum of anything that he thinks requires correction in print?—I will now proceed to make a few observations. I have had the advantage of reading over the evidence given by Sir Percy Herbert, as well as the very clear evidence that was given by Colonel Adye. The points to which I would invite the attention of the Committee are these:—I see that a very important and grave issue has been raised by Sir Percy Herbert, in his evidence, as to the abolition of General Brevets, and the introduction of a system of fixed establishments of General Officers. I can only say that I can give my evidence in favour of a fixed establishment of General Officers as one which reduced a system of irregularity, and I may say (in order to express fully my meaning), an arbitrary issuing of orders to make promotions on an extensive scale at irregular intervals, so as to be infinitely less advantageous to the Service to which I belonged, than the system of fixed establishments has proved to be. I am very glad to find that in that respect Colonel Adye has borne very strong testimony indeed in favour of a fixed establishment of General Officers of Artillery. I may also beg the attention of the Committee particularly to a fact, and a very useful fact, which Colonel Adye has brought out in his evidence, that in consequence of having no fixed establishment of General Officers of Artillery in 1854, there was not a single Major-General in the Indian Army. General Alexander and General Hancock will be quite alive to the inconvenience caused to the Indian Military Service from this deficiency of Major-Generals. I do not believe that when General Alexander was Adjutant-General of the Madras Army, we had a single Major-General of the Indian Army in command of a Division,—I believe they were all Lieutenant-Colonels, commanding divisions, with the local rank of Brigadier-Generals. I find, on referring to Colonel Adye's Table, that for the Indian Army the number of Generals was 84; the number of Colonels 153; the Generals and the Colonels being nearly all Colonels of Regiments,—indeed, we had, in India, in that year, only a few Officers above the grade of Lieutenant-Colonel who were not Colonels of Regiments.

122. (*President.*) Do you mean acting Colonels?—No; full Colonels of Regiments, receiving the regimental allowance; and they were thereby necessarily excluded from commanding regiments, and only available generally for superior commands. The consequence was that, I believe, the Divisions in the Indian Army mainly were commanded by Lieutenant-Colonels, at all events a considerable number were, as we had no Major-Generals in the Indian Army at the beginning of 1854; thus, officers of subordinate rank were employed to perform the duties of Generals, and that was in consequence of the Indian Army being without a fixed establishment of General Officers.

123. (*Sir Charles Yorke.*) I suppose they had died off before?—I would answer that question by explaining that the condition which Major-General Sir Percy Herbert maintains should regulate the rise to the rank of General Officer is the date of rank of Colonel, that in consequence of the General Brevet system we had few Colonels in India who, by the dates of their Commissions, were entitled, say, at the Brevet of 1851, to be promoted to be Major-Generals. I do not mean to say that no Colonels of the Indian Army were made Major-Generals in 1851, but there must have been very few, as in 1854, three years afterwards, we had no Major-Generals in the Army in India, with a strength of 250,000 men. Therefore, the system of General Brevets, to which Sir Percy Herbert attaches so much importance, failed entirely in respect to supplying the Indian Army with Major-Generals. The Committee have now before them the evidence of Colonel Adye, to show that the fixed establishment of Generals has proved very advantageous to the Royal Artillery.

124. (*President.*) You mean the abolition of it?—Yes; the abolition of the system of General Brevets, and the establishment of a system of continuous promotion. This point also gives rise to a very important phase, to which I beg to call the attention of the Committee. Sir Percy Herbert very properly says that two armies cannot serve with advantage together in the same country, and be upon an equal footing, unless the rules of promotion are substantially the same. Colonel Adye also insists very strongly in his evidence, that it is essentially necessary that the gradations of rank for rising in the Army, should be so made as to give a fair average promotion to the Officers serving in it. There is also this peculiarity, that whilst Sir Percy Herbert's statement goes against the Indian Army in respect to rising by the rules of promotion, to which they were entitled, he makes no mention whatever of the seniority services of this country, but seems to make the Infantry and Cavalry of the British Army, as it were, the standard by which to measure all other promotions of all other branches. Now, it is in this wise the Indian Army should be compared, for it was formed upon the same principle as the seniority services of England,—that is to say, in 1796 the system was changed which the great Lord Clive established, of one general rule for all officers rising by seniority; they were divided into Regiments in 1796, the under officers were entitled to rise in regiments to the rank of Regimental Colonel in the same manner as the Artillery, and Engineers, and the Marines of England, now rise Sir Percy Herbert shows clearly that from 1807 down to the latest date, 1834, it had been the habit to interfere in England to prevent the rise of Indian Officers to the rank of Colonel, regimentally, and that in 1807 the first order to that effect was issued, which was really a continuance, as I have said in my notes, of the Duke of Wellington's Memorandum of 1804. That was the first interference. In 1829 it was changed. The rise to the rank of Regimental Colonel was then restored, as fixed in 1796. Lord Hill interfered in 1834, it was again changed in 1837, so that, in consequence of those changes, so detrimental was the interference, that in

1854 we had no Major-Generals in the Army, because we had no Colonels of the same standing and rank as the Colonels of the Queen's Service, whose promotion to the rank of General was regulated by the General Brevets.

I would also draw the attention of the Committee to an important argument, if it were thoroughly well based, which Colonel Adye very properly advances against the supersession which has lately taken place in India; that by the Warrant of 1854, when the 220 Generals were given, it was considered that there should be fixed proportions of ranks relatively to each other, so that when a derangement took place in 1861, those proportions should have existed in 1861 as they were in 1854. But I have already shown that we had no such proportions of ranks; for the number of General Officers and the number of Colonels were, in 1854, singularly few. In that respect I would beg your attention to this point, that in 1861, after all the advantages which had been given to the Indian Army of a fixed establishment of General Officers, and of Lieut.-Colonels qualifying to attain the rank of Colonel by certain periods of service, still the Indian Army was far below the number, and had far fewer Colonels and Lieutenant-Colonels than the English Army had; it is in respect to the diminished numbers in those ranks that, I think, the Committee will find supersession mainly has to do. Speaking off-hand, I think 1,000 Colonels existed in the English Army on the 17th of February, 1861; whereas on that date, which was the day before the change took place, or what is known as the Indian Army amalgamation, there were only 208 Colonels in the Indian Army, and 202 Lieutenant-Colonels, the total being 410. Whereas I have no doubt, if the numbers were counted at that time, there were probably four times that number in the English Army. But on the 17th of February, 1861, before any change took place, with regard to the Staff Corps, of those 208 Colonels, there were 48 Colonels of from 42 years' service to 52 years' service. I need not say that those officers were entirely useless for the Army, for active service. There were 95 Colonels, nearly one-half of the whole number, of from 37 to 41 years' service, there were 47 Colonels of from 30 years' to 36 years' service; five Colonels only of from 25 to 29 years' service; 13 Colonels of from 20 to 24 years' service, and none under 20 years' service. I may say that we had many Colonels in 1861, of the British Army, who had only from 20 to 30 years' service. If we had a Table of that kind prepared, we should then have a comparison in the same way as to the Lieutenant-Colonels of the Home Army; but there were no fewer than 26 officers out of the 202 Lieutenant-Colonels of the Indian Army, who were of from 37 to 41 years' service in the rank of Lieutenant-Colonel.

Now this length of service is important, in connection with the subsequent proceedings of the Government n India, and which have led to these late promotions. The Calcutta Amalgamation Commission, of which I was a member, in 1861, being desired by the Government to see in what manner we could get rid of these old Colonels and officers, prepared a system for the retirement of the older officers of the Indian Army. It was prepared by a very able officer, who was thoroughly acquainted with the business of an actuary, and, in fact, recognised as an authority amongst actuaries. He prepared a scheme for our Commission, and it was submitted to, and approved of, by the Governor-General of India. It was sent home to England, but unfortunately changes were made which, I think, were detrimental to the principle upon which we acted, and it was this:—We tried to diminish the number of the officers of all grades in the Indian Army, by inducing all those who had had very long service, and we had some Captains who had been in the Service from 40 to 44 years, to retire. A scale of retirement was prepared with a view to induce that class of officers to leave the Service,—a class of men who never could rise to the rank of General Officers, or who would be thoroughly useless to the Service if they did so. But still, in spite of alteration that was made at home in the Calcutta plan, a very considerable number of old officers retired who would not, I believe, or a great proportion of them, have remained in the Service, even if that retirement had not been offered. But it was real economy on the part of the Government to induce those men to leave India on about half of the pay they would have received if they had remained in India. In consequence of these retirements Colonel Adye has very properly brought forward, and has shown distinctly, that the rise of the Colonels in the Indian Cavalry and Infantry has of late been very considerably accelerated by that means.

Colonel Adye also mentioned, and very clearly too, another act of the Government here, which was entirely independent of the amalgamation, and need never have formed part of the scheme, that promotion has been accelerated to the Staff Corps by the removal of the Colonels of Artillery from the General Gradation List of the Indian Army, many of whom were old and entitled to promotion from length of Service, as well as by the dates of their Commissions. The removal of Colonels of Artillery and Engineers from the Indian List, has brought to the top of the List, the Colonels of Infantry and Cavalry. Now that was a proceeding which was entirely independent of the amalgamation of the armies, and need never have been carried out unless the Government thought fit to do it, as they did think fit in this country. I may mention that I gave evidence against this measure before Sir John Aitcheson's Commission; I then expressed myself strongly to the effect that the separation of the Colonels of Artillery and the Colonels of Engineers should not be made from that List, then foreseeing that in a few years' time this very supersession would give rise to an outcry, and a very reasonable one, on the part of the British Army. But I may also mention, although it is the case, that an impetus has thus been given to the promotion of those now at the top of the List of Colonels in the Indian Army, enabling them to attain the rank of Major-General in a fewer number of years than Colonels in the British Army can do: but at the same time this is not likely to last. I believe that the retirements to which I have alluded would all have taken place, and I think an examination of the list of Indian retirements will show that a very considerably diminished number of retirements have taken place since 1861, as compared with the retirements of former years.

125. I presume you mean that there were a number of anticipatory retirements; that there were a great many in one year, which would otherwise have been spread over subsequent years?—Yes; the retirements on superior pensions all date from the 31st December, 1861; deaths have since taken place, but if a list is made out of Indian Officers who have retired on or since that date, I think it will be shown that the retirements of 1861 were merely anticipatory. It is also of importance to notice, and Colonel Adye has called attention to the fact, that a new element has been introduced into the Indian Army, that of rising to the rank of Colonel by length of service at the end of 31 years. My own opinion has nothing to do with the matter, but I have never been able to see the advisability of such a system of promotion. It is novel in its nature, and certainly does not, so far as I know, present either to the public service, or in any other way, advantages commensurate with the inconveniences which attend it.

126. (*Sir Duncan Cameron.*) Was not that done in order to put the Line Officers on a par with the Staff Corps, who get their promotion after a certain period of service?—No; it was a plan entirely prepared in England, as the papers show, between Sir Charles Wood and Major Norman, who was then at home on leave. No official paper of any kind has ever fallen under my notice which shows that they had any desire whatever to regulate the rise of the Staff Corps Officers in reference to the regimental officers of the Indian Cavalry and Infantry.

127. (*President.*) When was that plan introduced?—

The Staff Corps system commenced on the 18th of February, 1861.

128. Did not the regimental officers complain?—Yes, they did, after the lapse of several years, or after the lapse of three or four years. Orders were then issued for all the officers of the Native Infantry and Cavalry who had not joined the Staff Corps to receive brevet rank or local rank in India, in order to keep them on an equal footing with the Staff Officers; that is to say, supposing that Major Norman had not joined the Staff Corps, he at the present moment would have been a regimental officer, standing as fourth Captain in his regiment; his name still appears on what is called the cadre of his regiment; but he would at the present moment have been a Major-General, but not by means of the Staff Corps rank, but by his date of rank as Colonel from being made Aide-de-Camp to the Queen, advancing him to the grade of Major-General. I may explain that the Commander-in-Chief assented to the officers of British Infantry and Cavalry serving in India being placed upon an equality by means of what they called local rank, and it was for that reason that I used the word "local" rank for both services.

There was a very strong point mentioned both by Sir Percy Herbert and Colonel Adye in their evidence, and it was with reference to the inducement which had been held out to the Indian Army for officers to retire as being of an exceptional nature. No doubt the applicability of that word depends upon the extent to which it is carried, as to its being correct, but I think that inducements in the English Army have also at various times been held out in various ways, both to induce English officers to retire as well as to give them promotion. In fact, the English Army between the Peace of 1815 and 1854 could never have kept pace with the age if they had not done so; as a means of promotion in the Queen's Army a very important measure was carried out, and which partly is being carried on to this day. In 1823, it began either with the Marines or the Artillery, I forget which; but seeing the stagnation of promotion in those two seniority Corps, the Government of that day came to the determination to permit officers of Infantry and Cavalry to purchase rank of the officers of Artillery, Engineers, and Marines who were disposed to sell out; that is to say, a Lieutenant-Colonel of Marines, who was anxious to leave the Army, was allowed to receive a certain sum from a Major of Infantry in the British Army; who thereby became a Lieutenant-Colonel in what they called the Unattached List, so that a very large augmentation, which has continued to this day,—and officers benefit by it,—was made to the British Army independently of the regimental one, I believe, of 225 Lieutenant-Colonels alone; but the information upon that point is very incomplete, and therefore difficult to get at. By the Commission over which the Duke of Wellington presided in 1840, that question was very thoroughly gone into, and the large expense to which the nation had been put by the sale of the Commissions in the Seniority Corps of Marines, Artillery, and Engineers was fully pointed out. That was one opening that was given as an inducement to officers to obtain promotion, which was much of the same character as the Indian retirements. In addition to that, in the year 1840, there was a considerable increase made to the amount which was paid by the nation for the full-pay retirements of the Infantry and Cavalry, Artillery, and Engineers. Again, in the year 1854, an increase in the full-pay retirements took place by the recommendation of the Commission which sat at that time. I think that for the Ordnance Corps the amount was then increased to 48,000*l.*

129. I may remind you that all that is given very minutely in the Report of 1854?—That is so. But another increase has taken place; two years ago a sum of 12,000*l.* was given to the Ordnance Corps to induce officers to retire.

130. (*Sir Charles Yorke.*) When was that?—That was about two years ago; that was a fresh addition. It is now a sum of 60,000*l.* for the two Ordnance Corps, as an inducement to officers to retire.

131. (*President.*) Instead of 48,000*l.*?—Yes; I think I ought to mention to the Committee that although the officers now at the top of the Colonels' List are close on promotion to the rank of Major-General in India have risen up very rapidly so as to obtain their promotion in less than six years after being full Colonel, yet judging from the number of casualties which will take place amongst the 173 General Officers of the Indian Army, I doubt very much indeed whether the junior Colonel of that list will obtain his promotion before the expiration of 12 years after being made a Colonel; and supposing him to have been 31 years in the Service on being made Colonel, he will have to serve 43 years altogether in the Service. I think that that is a service, and he will be at an age quite old enough for any one to become Major-General.

132. (*Sir Duncan Cameron.*) How do you arrive at that; how do you calculate that the junior Colonel will be 12 years in obtaining the rank of Major-General?—I believe that the number of casualties will be very few amongst the 173 General Officers. As far as I can make out there will not be more than from 8 to 9 casualties amongst the General Officers, and taking the rise to be to the extent of 10 promotions every year, which will be a very considerable number, that will as nearly as possible bring the time up to 12 years at least, before the junior Colonel obtains his promotion; and of course, having regard to a number of young officers who have been fortunate enough to rise to the rank of Major-Generals, their lives will be very good, and thereby diminish even the number of casualties amongst the General Officers.

I may next point out, with regard to the relative chances of rising which formerly existed in the Indian Army, including Artillery, Engineers, Cavalry, and Infantry, that under the former system, taking the Royal Artillery as the standard, the gradations were exceedingly unfavourable to the rise of the Indian officers; for instance, when General Alexander and General Hancock commenced their careers, as well as myself, I being several years younger than they are, our proportions were 16 officers above the rank of subaltern to 30 subalterns. The Royal Artillery had 24 offi ers above the rank of subaltern to 124 subalterns. I need not say that a gradation like that, so exceedingly favourable for the Royal Seniority Service at home, shows to great advantage as compared with the chances of rising in the Indian Seniority Army; and yet with that favourable chance of promotion, we know very well that the Royal Artillery, up to 1854, were exceedingly backward in their promotion; and, as Colonel Adye has justly shown, the Colonels were in that year of an age that they were practically speaking not fit for service. No doubt the same evil results followed in the Indian Seniority Service, for there officers of rank reached great ages whilst still in command. I know of nothing that was more detrimental to the efficiency of the Indian Army than the fact of having so many old officers as we had.

133. (*President.*) With regard to the retirements on full-pay in the English Army, and which have been constantly going on, was there anything analogous to that in the Indian Service?—Yes; to a large extent.

134. There was a continuous mode of retirement provided for the senior officers?—Yes; ever since 1796.

135. Was that irrespective of the Clive Military Fund?—Lord Clive established that fund in order to provide for officers who then had no means of returning to England, and up to 1796 that was one of the most noble funds that could be desired. In 1796, for the first time, pensions were given according to rank; for example, a pension of 365*l.* a-year was assigned to the rank of Lieutenant-Colonel, calculating then that that rank would be attained in 22 years. Subsequently, finding that promotion was very stagnant, the Court of Directors on three different occasions changed the retirements by granting more liberal terms, and allowing not only the retirements granted in 1796 to remain in force, but they also granted retirements for actual length of service, so that several Captains have retired upon the pensions of full Colonels.

136. How was it that the officers remained of such a full age in India so as to fill up the ranks?—The fact was, although we speak of the liberal pensions of India, and no doubt they were very liberal. very few men saved money, and the consequence was that they came home to England with 450*l.* a-year, which was the highest pension, and which of course placed an officer who had been all his life living in some degree of affluence, in a position of comparative want; the pension, although very liberal, was very much below the amount of pension required, having regard to previous habits of life in India.

137. Will you be good enough to explain how it is, if for the future we are to suppose that a Colonel is to remain 10 or 12 years in that rank before he attains the rank of Major-General, promotion has been so much more rapid in the last few promotions that have taken place?—I think that Colonel Adye has brought that out very well indeed. He has shown that by the separation of the Colonels of Artillery and Engineers from the Colonels of Infantry and Cavalry in the Indian Army it has brought the younger Colonels of the Staff Corps, and of the Cavalry and Infantry, to the top of the list, and by that means has unusually expedited their advancement to the rank of Major-General. There is no doubt that some of the retirements which took place in 1861 have also facilitated the rise of those officers.

138. Of course if your theory is a correct one, that anticipatory retirements were caused by what took place, they would have produced that effect in the first instance?—Yes.

139. When the Colonels of Artillery were taken from the Indian List and put on the General List, was there no compensation given with respect to the General Officers on the General List?—These changes were in this wise. The first change that was made in the Indian List of Generals was practically speaking in 1861, although it did not take effect until 1862, in consequence of official delays. But in 1861, the European Infantry and Cavalry of the Indian Army, comprising 12 regiments, were then transferred to the British Army, and 12 General Officers were struck of the strength of the Indian List, reducing the number from 220 to 208 Generals, that is to say, there were 12 officers with the rank of General, Sir Robert Vivian, General Hall, General Wylie, and others, who were all brought away from the Indian Army, and put into the General List of the English Army amongst Infantry and Cavalry Generals. So in like manner at a subsequent date the Indian Engineers, then comprising 11 battalions, were transferred; and on being transferred over from the Indian List, 11 Generals were struck off the strength of the Indian List of Generals, and were formed into a separate list, in which the three regiments of Indian Engineers now rise. So in like manner with regard to the Artillery; the Artillery being struck off the Indian Army only last year, there were then 24 General Officers taken away from the Indian Army and formed into a separate list here for the three regiments of Indian Artillery, thereby reducing by these changes the whole number of Indian Generals from 220 to 173.

140. Notwithstanding that the Generals were taken away from the Indian List, how was it that the transfer of the Indian Artillery and Engineers to the consolidated corps benefitted the regiments of the Line in India?—I think Colonel Adye has shown that the Indian Artillery by removal from the Indian List have suffered in their chances of rising to the rank of Major-General they have not only been greatly injured, but on examining the gradation list of the Indian Army, you will find that as the senior Colonels of the Indian Army were chiefly Engineer and Artillery Colonels, their removal has benefited the Staff Corps; for instance, I find Colonel Stewart now a General Officer, Colonel Norman now a General Officer, Colonel Green now a General Officer, all had a number of Artillery Colonels senior to them; consequently last year, on the Indian Artillery Colonels being taken away, Colonel Norman and Colonel Stewart actually gained about two years promotion by the removal of the Indian Artillery Colonels and the Indian Engineer Colonels.

Colonel JOHN ADYE, further examined.

141. (*President.*) Have you any observations to make upon the evidence you have just heard from General Balfour?—General Balfour, in his opening statement has discussed the slow regimental promotion of former days in the Indian Army, and I am quite ready to admit that his statements are founded entirely on the facts of the case. But what I wish to observe is, that that is not the question now under consideration of the Committee; it is the second period of an officer's life,—that is to say, his promotion from the rank of Colonel to that of General, which is being discussed, and therefore General Balfour's argument as to slow regimental promotion does not bear upon the present case. The second point in General Balfour's evidence to which I wish to refer is this,—he says, and the Committee appear to attach great importance to the fact, that the retirements of 1861 were merely in anticipation of those which might have been expected in the few following years. Supposing that they were so, they were not to my mind the less injurious, which is proved by the fact that we are now suffering severely from those accumulated retirements which gave this rapid promotion (or were partly the cause of it), of the Indian Colonels. The Colonels in the Royal Army have had no such advantage conferred upon them; and with regard to the fact that the Colonels of the Indian Army do not retire much now, I would say that they have little inducement to do so. At the time, about 1861, when those enhanced retirements were given, the whole system of promotion in the Indian Army was altered, and it was made very advantageous, Colonels now rising to that rank in 31 years; and they get their off reckonings, that is Colonels' allowances are guaranteed to them a few years after that. Therefore, naturally the present officers do not feel any inclination to retire; there is a great desire now to buy a large number of them out again, because there are more of them than are wanted; but they will not go, because their prospects are so excellent by remaining in the service. Then General Balfour, with regard to the Royal Artillery, has mentioned that some years ago the old officers of Royal Artillery were allowed to sell unattached commissions, and thus to give promotion to their corps. That is also perfectly correct, but the reason was that after the Peace of 1815 a very large body of officers in the Royal Artillery were placed on half-pay summarily, and promotion was stopped until they could be brought in one after the other. The regiment was perfectly paralysed for years, and therefore with a view in some degree to saving, and the quickening of promotion, these means of retirement were given to a certain number of Officers. I think I am right in saying that after the Peace of 1815, there were upwards of 200 officers of one small regiment, as it was then, on half-pay, who had to be brought in one after the other.

142. (*President.*) General Balfour did not state that as a grievance or a wrong, but merely as an illustration that something of the same kind had, on public grounds, been introduced into the Royal Army, as, upon public grounds, had been introduced into the Indian Army in the year 1861?—Yes; but I would say that the circumstances were not the same. In our case they were given to try to bring us back to something like serviceable condition, whereas in the case of the Indian Army they were not given from any cause of the kind. The enhanced retirements in the Indian Army were given to get rid of a certain number of officers, but not to quicken promotion. It was a financial consideration entirely, and it was carried out without reference

to the injury it must do to the Royal Army. Then General Balfour stated, in another part of his evidence, that a large and fresh addition of retirements has been given in the last two or three years to the old Royal Artillery; but I would observe that the additional sum of money now granted annually by Parliament for the Royal Artillery is simply in confirmation of the old system, and is given in consequence of the large augmentation made to the regiment—several brigades—about the time of the Crimean War and the Indian mutiny. Therefore the augmentation referred to by General Balfour was only in proportion to what was given before, that is the amount only increased in proportion to our numbers. General Balfour also compared the respective proportions of the superior officers in the old Royal Artillery as compared with their juniors, to the proportions in the Indian Artillery; he pointed out that the officers in the Indian Artillery had very defective regimental promotion; that they had a large number of junior officers as compared with the senior officers, and he referred to that as showing that the Indian Artillery did not formerly enjoy quite the same advantages as the old Royal Artillery. It is perfectly true, but this was rectified as soon as the Indian Artillery were amalgamated with the Royal Artillery, and they had considerable promotion in consequence. There is only one small point further to which I would refer, that is with regard to the rapid promotion which the Colonels of the Indian Infantry and Cavalry have enjoyed since the Indian Artillery and Engineers were separated from them in 1868. The Committee will find by referring to the Army List of January 1869, which was just a short time after the separation had been accomplished, that the Indian Cavalry and Infantry had 173 Generals to 81 Colonels, that the Indian Artillery had 32 Generals to 66 Colonels, and the Indian Engineers 12 Generals to 29 Colonels; Consequently the promotion of the Colonels in the Indian Infantry and Cavalry must be very rapid, because they have so few Colonels as compared with the General Officers.

Major-General BALFOUR, further examined.

143. I am anxious not to be misunderstood by the Committee; I beg to say that I should rejoice most heartily in seeing anything done that could advance my brother officers of the Artillery, and I do not mention anything in the way of comparison with a view to deprive them of any advantage they possess. I am sure that they require and deserve everything that can be given to them, and I cordially join in the desire to see Mr. Childers' scheme of retirement carried out with a view to advanced promotion. There is, however, one thing which I wish to say. It is quite true, as Colonel Adye stated, that the Indian Artillery have been assimilated with the Royal Artillery. I may mention that Colonel Adye has been aiding in effecting that object, and in doing right good service in India, and I am grateful to him for the good service he has rendered, but the Indian Artillery did not get that assimilation in time. The senior Colonel in the Indian Army, according to the Army List before me, is Colonel Simpson, of the Artillery; he is an older officer than I am, and 14 years senior to Colonel Adye; he belongs to the same regiment as I do, but I had the advantage of getting brevet rank, and have gone up above him. If the assimilation of the Indian Artillery had been effected in proper time, this officer would have been long ago a Major-General, but he did not get back rank when the assimilation took place. If he had got his Lieutenant-Colonelcy immediately after being promoted from the rank of Captain, he would now have been high up in the list of General Officers, and very probably would have stood above me. So that whilst I admit that that assimilation was completed in 1861, as far as the gradations of rank were concerned, the advantages of previous promotion have been denied them, and so far therefore it is a loss to the Indian Artillery Service. General Simpson, the senior Colonel of the Indian Army, has been passed over by junior Colonels of that Army.

The last replies of Colonel Adye induce me to ask permission to explain the serious retardation of promotion occasioned to the officers of the Indian Artillery, by the delay in assimilating the grades of the Indian Artillery Corps with those of the Royal Artillery.

This explanation will, I hope, be useful to the Committee, in this way: no doubt the removal of the Colonels of Artillery and Engineers from the Indian List, and placing them on a separate List for rising to the grade of General Officer, has accelerated the rise of the Staff Corps Officers of India from Colonel to Major-General by at least two years, if not more.

The re-transfer of the Colonels of Indian Artillery and Engineers to the Indian List, would at once correct in a degree the undue promotion of the Staff Corps Colonels, and those promoted to Major-General would have their date of rank altered.

There is a precedent for this. In 1858, I, being then a Major of Artillery, had that Majority converted into a Lieutenant-Colonelcy, in assimilation with the gradation of the Royal Artillery.

The Indian Infantry Officers complained of the date of this rank being assigned as that of the Majority, and under orders from England my date of rank was altered to the date of the order.

The change did not affect me, for I was a Colonel in the Army; but many Artillery Officers in the same position suffered by being deprived of the rank of Lieutenant-Colonel, not being that of the Majority. I may here mention that the re-transfer of the Artillery and Engineer Generals and Colonels to the Indian List, will not benefit me in the slightest degree. Indeed, I believe that I have a better chance of succeeding to my Lieutenant-General's grade by being kept on the separate List as at present. I made the like suggestion to Sir J. Aitcheson's Commission, but it was reported against on grounds which have proved to be ill-founded.

The re-transfer will however benefit the Artillery Service, and they have some claims for consideration, seeing that Colonel Adye freely admits, that though the Indian Artillery is now in possession of the same grades as the Royal Artillery, yet that the past advantages for that favourable gradation has not been given. This enables me to illustrate the advantages that the Seniority Service of the Home Army had over the Seniority Service of India, by the gradations of ranks and numbers in the grades of the Home Services being on a far more favourable scale than existed in the Indian Army, and I cannot use any words more suitable to express my own view, than those recorded on the evidence as given by Colonel Adye in reply to question 56.

The inequality in regimental arrangements, to which Colonel Adye objects, will be seen to have been great between the Indian Service and Royal Artillery, as the following comparison will show:—

In 1827, the grade of Major of Royal Artillery was abolished by all the Majors being made Lieutenant-Colonels. In 1837, the grade of Major in the Royal Marines was also converted into that of Lieutenant-Colonel. The grade of Major of Royal Engineers was abolished on 1st January, 1783. In the three seniority services of England, the Captain was promoted to be Lieutenant-Colonel instead of first being made Major.

This change no doubt greatly accelerated the rise of officers of Artillery; by attaining this rank they had the advantage of rising to be Colonel by the General Brevets, as well as of attaining that rank regimentally. But above all they could not be superseded by junior Lieutenant-Colonels of Infantry and Cavalry. The rank of Major was however still kept up in India, and continues to this day.

On the abolition of the rank of Major of Artillery in 1827, the Royal Artillery had a strength of 469 officers, besides unattached Generals. In that same year the Indian Artillery had 460 officers, formed into grades and in proportions on the standard of the

Infantry, it being the policy of the East India Company to maintain uniformity as far as possible between the Infantry, Cavalry, Engineers, and Artillery.

The two Artilleries, Royal and Indian, were composed as follows:—

	Royal Artillery.		Indian Artillery.	
Colonels Commandant.	10		} 20	
Second Colonels ..	20			
Lieutenant-Colonels ..	42		20	
Majors	..		20	
		72		60
Captains	81		100	
Second Captains ..	84		..	
		165		100
1st Lieutenants ..	171		200	
2nd „	61		100	
		232		300
Total	..	469	..	460

In addition to the above the Royal Artillery had seventeen General Officers unattached, that is Colonels made Generals, and these vacating their regimental position and so giving promotion to the officers of the corps. The Indian Artillery had no such promotion given them, for only two or three officers were ever promoted so rapidly as to be obliged to leave the corps.

The Captain of Royal Artillery had the chance of casualties amongst 72 superior officers, whereas the Indian Captain had only the chance of 1 in 60. The Royal Artillery Captain at once became a Lieutenant-Colonel, but the Indian Captain was made a Major, all the average service in that grade was upwards of five years.

This contrast between the two Services may be extended. With a view to provide for the employment of Royal Artillery Officers on staff duty, away from regimental duty, the Government authorized the places of the absent officers to be filled up, by promotions being given to the juniors.

In India officers were withdrawn for Staff duty, but not replaced. The promotion given to the Royal Artillery was thus withheld from the Indian Artillery, and that it was extensive may be seen from the following statement of officers who were withdrawn from the Royal Artillery, and seconded, as it was termed:—

Colonels	4
Lieutenant-Colonels ..	5
Captains	14
Second Captains	4
First Lieutenants . ..	1
Total . ..	28

These withdrawals greatly accelerated the rise of Royal Artillery Officers, and connecting the various openings for promotion which in a long course of years can be shown to have been granted to the Royal Artillery. I am confident that the advantages derived by that corps would exceed those granted to the Indian Artillery and Indian Army.

I cannot conceal from this Commission, that if the Seniority Service of India had enjoyed the favourable gradations allowed to the Seniority Service at Home, that the promotion of officers in the Indian Army from one grade to another, would have been far more rapid than that enjoyed by the Home Services.

I may add that the seconding system of the Royal Artillery was extended to the Indian Artillery in 1861; and in fact continues to this day. Now, about two years since, the Royal Artillery being anxious to obtain an increase to the retirement, proposed that the seconding of the officers of the grade of Colonel should cease. On this inducement the increase was granted. But the Indian Artillery suffered severely by a change which benefited the old Royal Artillery.

144. (*President.*) Colonel Adye has stated that there are very few Colonels as compared with Generals now upon the Line List. Can you account for that?—We have never had the advantage in the Indian Army of the large promotions which were given after the Crimean War, in various ways, for distinguished services. A considerable number of those officers were promoted in the English Army, and for some time the number of qualifying appointments from the rank of Lieutenant-Colonel was very considerable in the English Army as compared with the Indian Army.

145. Does the rule as to qualifying appointments extend to the Indian Army?—Yes.

146. When was it applied to the Indian Army?—In 1854.

147. I suppose it was done in imitation of what had been done in the Royal Army?—Yes; the Court of Directors' Letter, giving the fixed establishment of 220 Generals, that was issued in 1854 was in conformity with the English Warrant, it followed the English system.

148. The Indian Government followed the example set in the English Army?—Yes; by a letter from the Court of Directors, which was promulgated in General Orders.

149. (*Sir Percy Herbert, through the Chair.*) I believe that the rule of promotion up to the rank of Lieutenant-Colonel in the three Indian Armies was regimental?—No; I have seen that you made that statement, and I have taken a note of it. It was this,—in 1796 the regimental rise was ordered to be in agreement with the home system, because the regiments were formed upon the principle of two battalions in India being equal to one battalion at home, and the officers were then made to rise to the rank of Lieut.-Colonel regimentally, that was the rule in 1796. In 1798, so inconvenient was this rule found that the Government altered it within two years, which was a very rapid thing in those days, so as to make them rise to the regimental rank of Major; for instance, supposing General Alexander, Major of a regiment of which I was Senior Captain, succeeded to the rank of Lieutenant-Colonel in the general gradation list of the Infantry Lieutenant-Colonels; on his promotion taking place to the rank of Lieutenant-Colonel. I then became a Major, and was then on the General List of Majors of Infantry.

150. Is it correct to say that the promotion up to the rank of Major was regimental?—Yes.

151. And that promotion from the rank of Major to the rank of Lieutenant-Colonel was from the Presidency?—Yes; and by branches of the Army. The Infantry Majors were in one list, and the Cavalry Majors were in a separate list. The Artillery were in one Corps from top to bottom, and the Engineers were in one Corps from top to bottom.

152. And the rise from the rank of Lieutenant-Colonel in the Cavalry and Infantry was upon one general list of the Indian Army, was it not?—Not quite so.

153. Will you just explain how that was?—It was in this way,—subsequently to the last interruption of the regimental rise to the full rank of Regimental Colonel, which was restored to the Indian Army in 829, Lord Hill's letter of 1834 was issued. It had the effect of changing the 1829 rise. Three years then elapsed, during which there was great disorder in the promotions of the Indian Army, partly in consequence of the inequality of rise, and partly from what has been called the Fane Major-General system. But in 1837 a change was ordered, in this wise—the Infantry of the Bengal Army, comprising in all say, 78 Colonels and 78 Lieutenant-Colonels, being the larger body of any one of the 12 branches of the Indian Army, was fixed on to regulate the promotion of Lieutenant-Colonels to the rank of Colonel throughout India. On the senior Lieutenant-Colonel of the Bengal Infantry being entitled to become a full Regimental Colonel by a casualty amongst the Colonels, that officer obtained his promotion at once, and all the Lieutenant Colonels, throughout all India, all senior to him, were then made (both Queen's and Company's) Brevet Colonels in India. From that date to 1854 no change took place.

154. The Queen's Officers receiving local rank?—Yes; receiving it in that sense.

155. With regard to the rise from the rank of Lieut.-Colonel to that of Colonel, did the officers or not rise upon one general list including the three Armies in India?—I fully admit that the rank of Lieutenant-Colonel was in India, as it was in the British Army, the standard by which officers rose to the rank of a General Officer; in the Indian Army they made the Lieutenant-Colonelcy, which they did not do in the seniority Corps of England, the starting point from which to rise to the rank of a General Officer. Consequently, when once you became a Lieutenant-Colonel in India, you did, practically speaking, rise in one general list, the advancement being regulated, however, by the rise in the largest branch of the Indian Army above explained. The rank of Colonel was thereby attained but slowly, as the Bengal Infantry was slow in promotion. Hence it was, that in 1854 we had no Major-Generals of the Indian Army, because our Colonels had been so backward in promotion that they were not on an equality with the Colonels of the English Army, and not entitled by General Brevet to the rank of Major-General.

156. Am I right in saying that a Lieutenant-Colonel having once attained that rank, in either of the three armies, rose to the rank of Colonel according to the date of his commission?—Quite so.

157. (*President.*) Was not the grade of Major the starting point in India, and was not the rise from that rank to a Lieutenant-Colonelcy a Presidency rise, and not a regimental rise?—Partially so: inasmuch as there were four Infantry Lines of Majors, four Artillery Lines of Majors, four Engineer Lines of Majors, and four Cavalry Lines of Majors; and in any one of those Lines a Major might become a Lieutenant-Colonel, although he was junior to other Majors in reality. Therefore, although strictly speaking, when you once became a Field Officer you were in the main body entitled to rise in the Army, still, as a matter of fact, the real starting point and the one over which no supersession did take place was, as Sir Percy Herbert has stated, the rank of Lieutenant-Colonel.

158. (*Sir Percy Herbert, through the Chair.*) Then I was right in saying that the promotion was strictly regimental up to the rank of Major?—Yes; that is to say, in the Infantry and Cavalry, not in the Artillery and Engineers where they rose up regimentally to the rank of Lieutenant-Colonel Commandant.

159. The rise from Major to Lieutenant-Colonel was according to the Presidencies?—Yes; according to the Presidencies, in each particular branch, that is to say the Bombay Presidency had one list of Infantry Majors and one list of Cavalry Majors. In Madras they had two lists, and so in Bengal they had two lists.

160. Then the rise from the rank of Lieutenant-Colonel to that of Colonel, was by seniority throughout the three Armies of India for the Cavalry and the Infantry?—Yes; that rank being regulated by the rise of the Bengal Infantry Lieutenant-Colonels to the rank of Colonel. I would also add that it was a violation of the Regulation of 1796.

161. Whatever was the regulating cause of the rise, the rise was by seniority from the rank of Lieutenant-Colonel to that of Colonel, was it not?—Yes; that is quite correct in that sense, that the Lieutenant-Colonel having once attained this rank, was then certain of the rank of Colonel.

162. You could not be superseded in the rank of Colonel?—No.

163. The promotion to the rank of Major was entirely by lottery between the different regiments, according to the fortune of war?—It was.

164. Therefore in attaining the rank of a Major, the date of a man's first commission had no influence whatever upon his attaining that rank, it did not affect his claim to the rank?—I think I can safely say that it did not affect his rank.

165. Did it affect his claim to rise to the rank of Major in any kind of way, or was it not strictly regimental?—Yes; I would say distinctly that an officer from the rank of Ensign, Lieutenant, Captain, and Major, took his chance of promotion in his particular regiment.

166. And therefore if A and B entered into different regiments on the same day, and A attained the rank of Major 10 years before B, that would give B no cause of grievance whatever, according to the rules of the Indian Army?—Quite so; but there is a qualification here necessary. In the event of any augmentations being made, the standing of the officers in the Service would be materially affected by the mode in which the augmentations were made, by taking the seniors of the different grades to be transferred to the new corps. Therefore, in some degree, the relative dates at which officers entered the Service would have some effect upon the promotion of those officers, still it would be in a minor degree.

167. That is to say, when augmentations were made and new battalions were raised, the senior officers of their ranks would be naturally the ones selected for promotion?—Yes.

168. Supposing two officers to be in different battalions, the dates of their commissions would in no way affect their claim to rise to the rank of Major; is that so?—Yes. No doubt the Court of Directors, like all governing bodies, tried to prevent the rise of any one branch in an extraordinary manner, and in that wise they made the Artillery organization exactly the same as the Infantry organization, and they avowedly gave certain branches of the Service additional Captains with the view of equalizing the rise in those particular branches. That is a wise administrative duty, which of course all governors should give their attention to in regard to the promotion of their servants.

169. Let me put the case of A and B again, and I will suppose that A enters the Service one year later than B, A attains the rank of Major 10 years before B by regimental promotion, but when B attains the rank of Major, would he have, according to the Rules of the Indian Army, any claim to be promoted to the rank of Lieutenant-Colonel before A, who was 10 years senior to him?—None whatever.

170. When A had attained the rank of Lieutenant-Colonel, several years before B, would B, when he became Lieutenant-Colonel, have any right to attain the rank of Colonel before A?—Certainly not.

171. When A had attained the rank of full Colonel, and B attained the same rank several years afterwards, would B have any claim to attain the rank of Major-General by virtue of his services before A?—Certainly not; but it must be remembered that all these questions require to have an explanation attached to them. You are speaking now of Infantry with Infantry, Cavalry with Cavalry, and so forth; but having regard to the interference with the regimental rise to the rank of Colonel, whenever you come to compare officers in different branches, then the interference in 1834 with the regimental rise to the rank of Colonel, did seriously affect relatively the different branches; for instance, a Captain of Cavalry might be superseded by a Captain of Infantry, although the Captain of Cavalry was ten years senior to the other. But the Captain of Cavalry might, if he had been left alone, have attained the rank of Colonel before the Infantry officer who had superseded him in the rank of Major; but by reason of the interference in 1834, it was prevented by making the Bengal Infantry the regulating standard for rising to the rank of Colonel in India.

172. I believe when the Indian Government transferred the Indian Artillery to the Royal Artillery, the Indian Artillery received very great regimental promotion by the amalgamation?—Very considerable.

173. And that was complained of by the officers of the Indian Infantry and Cavalry as a breach of faith with them?—The date referred to by you is that of 1858, and in that year, which was the year before the Indian Army was transferred to the Crown, the Indian Artillery had two advantages given to them, the object being to place them somewhat on an equality with the Royal Artillery who had then come out to India; the rank of Major was abolished in the Indian Artillery,

and the rank of Second Captain was also created. The Government gave the officers who were Majors the rank of Lieutenant-Colonel, with the date of their rank as Lieutenant-Colonel, antedating the date when they became Majors. The Infantry and Cavalry Officers of the Indian Army then presented petitions and memorials, and those petitions and memorials being sent home to England, it resulted in the date of the rank being altered to the 27th of August, 1858, the day on which the change took place.

174. Then there was the promotion in 1858?—Yes.

175. The officers of the Infantry and Cavalry, complained that their interests had been neglected in those arrangements?—Quite so.

176. In consequence of those complaints other arrangements were afterwards made, and a very large amount of retirements was given to the officers of the Infantry and Cavalry of the Indian Armies?—Not in consequence of those complaints. The large retirements of 1861 originated with the Commission of which I was a member.

177. Was there not a vast number of complaints made to the Government at home, and were not petitions presented through Members of Parliament?—That was afterwards; the main retirements took place in 1861.

178. That is what I am alluding to. After 1858 the Officers of the Infantry and Cavalry made great complaints of the disadvantages under which they were labouring, and that faith had been broken with them by the promotion, contrary to the rules under which they had entered the Service, of Artillery and Engineer Officers?—I do not remember that any particular complaints were made after the Lieutenant-Colonels' rank of the Artillery was altered back to the date of the rank; it was in 1861 that the retirements took place on the 31st of December. It was an entirely financial matter, and the object mainly administrative on the part of the Government of India.

179. Had it nothing to do with complaints that had been made that the Officers of the Cavalry and Infantry had not received their bonuses?—I say distinctly not; our Commission originated the thing quite independently of that. We found about 2,000 surplus officers belonging to the establishment, which Sir Charles Wood, the then Secretary of State for India, proposed, and by order of the Government of India we devised, a measure by which a reduction could be effected in the number of supernumeraries. Subsequently to that various petitions and memorials were presented to Parliament, and Commissions of Inquiry were appointed—Lord Cranworth's Commission and Sir John Aitcheson's Commission—in order to investigate the various claims which the officers of the Infantry and Cavalry had put forward. There have been continual changes since 1861.

180. Did not the Artillery and Engineer Officers get increased pensions in 1861?—In 1864 they gave a few retirements of 700*l.* each to a certain number of officers of each regiment of Artillery.

181. But less in proportion were they not, than to the rest of the Army?—Very considerably less.

182. Then the Imperial Government, or the Indian branch of it, in order to get rid of a large number of officers whom they considered in excess of their requirements, and in order to lessen the complaints of the officers that they were not enjoying the same advantages as they would have done if they had remained under the East India Company, gave a large number of retirements in 1861, and subsequently?—Not subsequently. The main body of the retirements took place in 1861. I do not wish that any misapprehension should exist, and it is very proper that Sir Percy Herbert should call attention to the acts of the Imperial Government, those being the acts of the Cabinet entirely independent of the India Office, but I must explain to the Committee that the retirements of 1861 had their origin in India, and I do not remember in any letter that came from the India Office, and there were several, that made any suggestion with regard to effecting the retirements of the surplus Officers of the Indian Army.

183. (*General Alexander.*) Will you be so good as to state, as concisely as you can, whether those retirements were given with the view of adjusting the rank, or compensating for quicker promotion, or was it simply a financial measure with a view to get rid of the old officers?—It was mainly to get rid of the surplus officers above the establishment, and the Secretary of State for India directed the Government of India to have a measure devised for the purpose of getting rid of the surplus officers.

184. Could that be possibly done, supposing that promotion in the Indian Army and the Queen's Army were regulated fairly? could such retirements possibly have been carried out with a view to financial objects, without putting the other Army to great disadvantage?—Of course, I most distinctly admit that no changes of that organic nature could possibly have been made without affecting, more or less, the officers of the British Army; but at the same time I must also ask to have it recorded, that if this had been a solitary instance, solely due to the Indian Army, then it is very just and right to say that one officer shall not pass over the head of another officer by unnecessary acts on the part of the Government of the day. But at the same time I maintain distinctly, for good objects I admit, that the British Government have at various times brought about similar results in the Home Army of England.

185. (*Sir Percy Herbert.*) I submit for the consideration of the Committee, that the admission made by General Balfour, goes pretty nearly to the whole of my case, that arrangements have been made by the Indian Branch of the Imperial Government for their own convenience, and that they have been carried out, no doubt, with great advantage to India; but incidentally a great injury has been done to the Queen's Army in so doing. In no way am I complaining of any amount of liberality that has been shown to the Indian Officers who were not required for the Service; but, in so treating them, the Imperial Government ought to have considered that an injury was not also done, having regard to the relative position of the English Officers. I wish to put two more questions to General Balfour. If the question of first Commissions is to regulate the rule of a man's promotion, will you have the goodness to explain the case of Colonel Ready and Colonel Salmon, who are on one Staff,—Colonel Ready is a Colonel on the Bengal List, and he will be promoted 12 years before Colonel Salmon, Colonel Salmon having entered the Service 12 years before him?—The explanation is very simple. By the decision at home, Colonel Salmon having joined the Staff Corps, the Imperial Government had a right to regulate the rise of those officers in any shape or form they pleased, but Colonel Ready still remaining on the Bengal Infantry List, and not having joined the Staff Corps, retains all the rights which he had under the Indian Government to rise to the rank of Colonel and General, irrespectively of Colonel Salmon, although Colonel Salmon stands above him in the list.

186. You have admitted already that the promotion alluded to is caused by regulations that were made subsequently to the amalgamation?—That is as far as regards Colonel Salmon and the Staff Corps Officers; but the regulations under which Colonel Ready would have risen under the Company still remain in force.

187. (*General Alexander, to Colonel Adye.*) You stated, when commenting upon what General Balfour had said, that in former years there was a very small proportion of superior officers as compared with Captains and subalterns in the Indian Artillery, and you said that that was rectified or adjusted at the time of the amalgamation. Will you be kind enough to show how that irregularity was rectified when the two corps were amalgamated?—I do not pretend to say that it adjusted the former inferiority of the Indian Artillery as to their promotion, but it adjusted it for the future.

188. It appears that there was formerly a relative disadvantage between the two corps, but you went on to say, as I understood you, that when the armies were amalgamated that disadvantage or inequality was rectified?—I did not pretend to say that as to the past it could be rectified. I only said that when the Indian Artillery were amalgamated with the Royal Artillery and were brought into contact with it, any inferiority under which they had suffered as to promotion was immediately rectified.

[The following paper was handed in by Major-General Balfour.]

SERVICE of the Colonels and Lieutenant-Colonels of the Indian Army on 17th February, 1861.

Total Years Service.	Number of Colonels and Lieut.-Cols.			Abstract.		
	Colonels.	Lieutenant-Colonels.	Total.	Colonels.	Lieutenant-Colonels.	Total.
52	1	..	1			
50	1	..	1			
47	1	..	1			
44	5	..	5			
43	10	..	10			
42	30	..	30			
				48	..	48
41	38	1	39			
40	15	3	18			
39	10	4	14			
38	23	11	34			
37	9	7	16			
				95	26	121
36	23	35	58			
35	4	11	15			
34	8	21	29			
33	7	11	18			
32	4	9	13			
31	..	9	9			
30	1	6	7			
				47	102	149
29	..	2	2			
28	1	3	4			
27	..	3	3			
26	2	8	10			
25	2	5	7			
				5	21	26
24	7	11	18			
23	2	8	10			
22	..	3	3			
21	1	14	15			
20	3	2	5			
				13	38	51
19	..	9	9			
18	..	3	3			
17*a*	..	1	1			
15*b*	..	1	1			
12*c*	..	1	1			
				..	15	15
	Total			208	202	410

a Norman. *b* Greatnead. *c* Probyn.

(Signed) G. BALFOUR,
Major-General.

APPENDIX B.

SUPERSESSION OF BRITISH BY INDIAN OFFICERS.

COPY of Correspondence relating to the Supersession of British Colonels by Officers of the late Indian Army.

No. 1.

Lieut.-General W. F. Forster, K.H., to the Under Secretary of State for War.

Horse Guards,
21st October, 1865.

Sir,

15 Aug., 1865.
31 Aug., 1865.

I AM directed by the Field-Marshal Commanding-in-Chief to transmit to you copies of letters, as per margin, and enclosures received from the Commander-in-Chief in India, which as affecting the position of Officers of the British Army in that country very materially, are of so important a nature, that His Royal Highness considers it right they should be submitted for the information and consideration of the Secretary of State for War without delay.

I have, &c.,
(Signed) W. F. FORSTER.

[Enclosure 1 in No. 1.]

No. 1776.

Head-Quarters, Simla,
15th August, 1865.

Sir,

I HAVE the honour, with much deference, to solicit the attention of His Royal Highness the Field-Marshal Commanding-in-Chief, to some very important considerations affecting the position of the superior officers of Her Majesty's British Forces. Thus, under the operation of the rules of promotion in the several services, the following full Colonels of the British Army now serving in India, viz.:—Colonel T. Williams,* C.B., 4th Foot; Colonel D. Rainier, 98th Foot; Colonel E. A. Holdich, C.B., 20th Foot; Colonel A. C. Errington, 51st Foot; Colonel S. T. Christie, C.B., 80th Foot; Colonel E. Haythorne, 1st Foot, have been superseded in India by the promotion to the rank of General Officer of Colonels in the local service.†

2. It is seen that all the Colonels on the Local Lists in India, of the year 1856, are now promoted to the effective rank of Major-General.

3. According to the averages of promotion in the British Army, the Colonels of 1854 will probably not have been absorbed in the rank of Major-General till the year 1868.

4. The supersession of the Colonels belonging to Her Majesty's British Forces by the Indian local Colonels cannot fail to go on at an accelerated ratio for the following reasons, viz., that the number of Colonels on the British Lists is immeasurably greater than that in the local Indian Lists, in proportion to the number of General Officers respectively borne on the two establishments. Thus the number of Generals of the different degrees is 272, in the British Service; the number of Colonels, by June Army List, is 394; the number of Generals on the Local List is 208; the number of Colonels, by the last Bengal Army List, is 123.

5. It has always been believed that the inequality to which attention has been invited, was in former times forbidden, under the orders of His late Majesty King William IV.

6. For some years the practice obtained of promoting all Officers to the local rank of Major-General in India, who were immediately senior to Officers of the Indian Service, who had been promoted by the Queen's Brevet.

* Appointed Major-General with temporary rank, February 1865.

† Colonel T. Williams has been superseded by all Major-Generals on the Indian List between Sir W. Coghlan and Major-General J. E. Landers,—viz., 13, including Major-Generals Showers, C.B., McLeod, and Troup, C.B., Commanding Divisions.

Colonel Rainier, 98th, by all below Major-General Lang,—viz., 17, including the above-mentioned Officers Commanding Divisions.

Colonel Holdich, 20th, by all below Major-General Showers,—viz., 16, including Major-Generals McLeo and Troup, Commanding Divisions.

Colonel Errington, 51st, by all below Major-General Welchman,—viz., 12.

Colonel Christie, 80th, by all below Major-General Welchman,—viz., 12.

Colonel E. Haythorne, Adjutant-General, by all below Major-General Landers,—viz., 6.

7. In 1854 a new system of promotion was established, the old General Brevet being abolished, After some correspondence, it was ruled by the late Lord Hardinge, when Commanding-in-Chief in England, that, as a consequence of the new system of promotion, the practice above alluded to known under the name of Fane promotion of Major-Generals, should no longer be permitted to exist.

8. Appeals against supersession have from time to time been made by Colonels of the British Service serving in India, which have been set aside under the ruling above quoted.

9. The question might therefore be allowed to rest, but for the fact that lately the Right Honourable the Secretary of State for India has, with regard to all other ranks, declared the very principle on the assertion of which the quondam promotion of Fane Major-Generals rested; and, secondly, the frequent supersession of British Colonels which is now proceeding.

10. Thus it is now seen (*vide* Secretary of State's despatch, D/ 17th June, 1864) that Lieutenant-Colonels, Majors, Captains, and Lieutenants, are promoted in the local Gazettes in India, to put them on a par in India with Officers who obtained rank under the Staff Corps Warrant.

11. This having thus been practically asserted, with Officers of inferior degree, the inquiry is now made by the old Colonels serving in India, whether the like principle should not also be applied in the case of Line Colonels who have been superseded by Major-Generals of the Indian Service.

12. The argument against this is, that the Indian Service is not the only one which presents a separate list of promotion, entailing such effects. Thus it is maintained that the Royal Artillery and Royal Marines being on separate Lists, occasional supersession of the Infantry and Cavalry Colonels takes place with regard to those branches of the Service, and *vice versâ*.

13. It is then argued that, if it be not objected to in those cases, there can be no reason for making an attempt to set aside the inequality in the case of the Indian Officers.

14. In the first place, it may be observed, in answer to this argument, that it was always understood in the Army at large that it had been distinctly stipulated, when the rank of General was granted to the Indian Officers, that the concession should not in any manner prejudice the condition of Officers of like standing belonging to the Royal Army.

15. But, secondly, there is a further reason; the analogy suggested by the Royal Artillery and Royal Marine Services does not stand the test of examination. The Officers of those branches of the Service do not generally come into contact with Cavalry and Infantry Officers.

16. Out of India, the ordinary divisional and brigade commands do not fall to them, whether in war or in time of peace.

17. In India, on the other hand, the Indian Major-Generals, who are now superseding the Colonels of the British Army in considerable numbers, will most assuredly take command of the latter as Generals of Divisions in the several Indian Presidencies, the very result being thus produced, against which, as we know, it was deemed formerly necessary to guard.

18. With respect, then, to the principle adopted for other ranks, I would venture to intimate, for the general consideration of His Royal Highness, that no good reason can be assigned for making exception with regard to the particular rank of Major-General.

19. It has appeared to me, therefore, the subject would seem to be one which may be, with propriety, referred for the consideration of His Royal Highness and of the Right Honourable the Secretaries of State for India and War, with a view to the application of the old rule, by which the local rank of Major-General is given to Officers having the rank of Colonel, who are superseded by the promotion of Officers of the local Armies of Bengal, Madras, and Bombay.

20. Supposing the old rule to be re-established, as above suggested, it would appear necessary, with regard to the Indian Service, on the other hand, that, if that were to occur, which is apparently impossible from the constitution of the lists of the several armies—viz., the case of a Line Colonel being promoted in the ordinary course to the rank of Major-General, who might be junior to an Indian Colonel, the latter should be promoted locally in India to the rank of Major-General, in order to preserve perfect uniformity and equality between the two Services.

21. It is to be remarked that the rank of Major-General being conferred on Indian Officers, not only for India, but for all the world, by the late changes, the state of things to which notice has been attracted is even more serious for the Officers of the British Army than was originally contemplated when the remedy above alluded to was applied.

22. It may perhaps be assumed that, in practice generally, the two sets of Officers would not come into contact, except in India.

23. The experience of the war of 1855-56 does, however, lead us to believe that in any development of the military resources of Great Britain for European war, this contingency would in all probability take place.

24. The argument contained in this letter would be hardly complete were I to omit to draw the attention of His Royal Highness to another general result of the constitution of the lists of Indian Field Officers.

25. Thus, owing to the number of Colonels, Lieutenant-Colonels, and Majors being proportionately less to the General Officers as compared with the like ranks in the British Army List, an Officer in the former, having been promoted to the rank of Field Officer, runs through the several ranks more rapidly than an Officer in the British Service till the rank of General is reached.

26. Officers who became Brevet-Majors in 1858 are now Lieutenant-Colonels in ordinary succession in the Indian Lists.

27. According to the last Royal Annual Army List, it is apparent that there are great numbers of Majors of 1855.

I have, &c.,

(Signed) W. R. Mansfield, General,
Commander-in-Chief in India.

P.S.—I would more especially invite your attention to the very important correspondence which took place on the matter of this letter during the command-in-chief of the late Lord Hill. The letter which more particularly lays down principles and rules is that from his Lordship to the President of the Board of Control, dated March 25th, 1834, in which the relative position of the King's Officers and those of the late Honourable East India Company is discussed in the most masterly manner; subsequent to the writing of that letter took place the correspondence between the late Sir Henry Fane and the Government of India, which resulted in the conferring of the local rank of Major-General on such Officers of the King's Service as had been superseded by those of the Honourable Company. I gather that copies of that correspondence must be in existence in your office, and I therefore abstain from sending copies, unless you should wish me to do so.

(Signed) W. R. MANSFIELD.

The Military Secretary,
Horse Guards, London, S.W.

[Enclosure 2 in No. 1.]

No. 1985.

Head-Quarters, Simla,
31st August, 1865.

Sir,

Nos. 502 & 503 / E / D 12 July, 1865 / From Adjutant-Gen.

I HAVE the honour to forward, for the most respectful submission, to His Royal Highness the Field-Marshal Commanding-in-Chief, letters as per margin, addressed under my orders to the Government of India.

The object of these communications is to represent the prejudicial manner in which the interests of the Officers of Her Majesty's British Army have been affected by the changes recently introduced at the instance of the Right Hon. the Secretary of State for India for the benefit of the Officers of the several Staff Corps and of the local Armies.

I believe that I can add but little to what has been set forth at length in the enclosed letters.

But I would submit, with the greatest deference, that the matter concerned is of the utmost importance, generally, to all classes of Her Majesty's British Officers who thus unexpectedly find themselves superseded in the several ranks.

The urgency of the consideration is the more apparent when we reflect on the fact that no considerable operations are likely to occur hereafter without the presence of Indian Officers, as was shown in the Crimea in 1854, 55, and 56, by the Persian War of 1856, by the operations and occupation of China and Japan from 1858 till this very year.

I do not venture to suggest a remedy which would probably have to be determined after the question shall have been thoroughly sifted by such means and enquiry as may commend themselves to His Royal Highness and the Right Honourable the Secretary of State for War; but as the Secretary of State for India clearly cannot go back from what has been done, it would seem that it may be necessary to have recourse to a system of Brevet promotion which shall be good all over the world for fixed terms of service, according to the rules which have been laid down for the Staff Corps. Such a change would not interfere with the system of purchase promotion, while, on the other hand, it would not fail to be most grateful to officers of considerable service, whose means may not admit of purchase, and would put the Officers of the British Service on a reasonable equality with those belonging to India.

I have, &c.

(Signed) W. R. MANSFIELD, General,
Commander-in-Chief in India.

The Military Secretary,
Horse Guards, London, S.W.

[Enclosure 3 in No. 1.]

From the Adjutant-General to the Secretary to the Government of India, Military Department.

Promotions. No. $\frac{502}{E}$.

Head-Quarters, Simla,
12th July, 1865.

Sir,

I HAVE the honour to acknowledge the receipt of your communication, dated the 19th ultimo, No. 211, giving cover to a despatch from the Right Honourable the Secretary of State for India, No. 157, of the 16th May last, which has been duly submitted to the Commander-in-Chief.

In this despatch the Right Honourable the Secretary of State has been pleased to declare, that the promotion of Officers of the Indian Service made under the provisions of par. 69 of his letter, dated 17th June, 1864, No. 194, is to be considered "Army rank," entitling "the Officer "receiving it to share in the advantages of promotion under the former system of general Brevet "promotion, and the system of promotion in succession to casualties amongst General Officers "established in November 1854, and it would follow that the promotions now made carry Army "rank with them, and entitle the Officers promoted to the advantages of further progressive promo-"tion by the Line step."

Sir William Mansfield instructs me to observe that the scope of the rule laid down in the quotation just given, seems to have escaped the notice of the Authorities by whom it was framed and approved. Thus the decision therein contained does, in truth, appear to set aside the provisions of Her Majesty's Royal Warrant of 31st January, 1859. By that Warrant the promotion of the Officers of the Indian Service,—saving those of the Staff Corps (for whom there is a distinct Royal Warrant)—has been hitherto regulated. In this manner the equality of position of the Officers of the British Army, whose promotion continues to be regulated by the Royal Warrant of 14th October, 1858, was preserved with that of the Indian Services. Now, however, owing to the ruling above quoted, the Officers of the British Army will be superseded, to a great and injurious extent, by those of the Indian Services. His Excellency believes it impossible to escape from this practical conclusion, but will be glad to be corrected if he be in error. In illustration of the supersession that will occur, His Excellency will take the case of Officers of the Indian Service promoted to grade of Lieutenant-Colonel under the late order. These Officers, according to the ruling of the Right Honourable the Secretary of State, are, *de facto*, in the position of Brevet Lieutenant-Colonels, who, except under certain conditions, do not, according to the Royal Warrant, succeed to the rank of Brevet-Colonel; consequently a Brevet Lieutenant-Colonel in a like position in one of Her Majesty's British Regiments remains stationary, while the Indian Lieutenant-Colonel, promoted according to par. 69 of the Secretary of State's Despatch, is to receive such promotion without the necessity of performing the qualifying service, without which no further advancement in the British Army can take place, except as reward of distinguished Field Service. Dated 17th June, 1864.

It is clear, therefore, that in the comparative progress towards the rank of General Officer, the British Brevet Lieutenant-Colonel is at a great disadvantage with the Indian *de facto* Brevet Lieutenant-Colonel.

It is true that the Regulations of the Royal Warrant of 15th June, 1864, provide as follows:—

"The whole of the Officers of Cavalry and Infantry of Her Majesty's Indian Army shall "remain on the Indian General List as before the Warrant of 1st January, 1862, and shall rise on "that List to the rank of General Officer, the establishment of General Officers of the Indian Army "being from time to time reduced in the manner hereafter provided."

But the Commander-in-Chief would desire to point out that the General Officers of the Ordnance and different Staff Corps, are ultimately to be brought on the strength of the British Army.

But further, a most important point has now to be considered. In former times the rank, precedence, and power of command of Indian Officers, were confined to India. They could not supersede Officers of the British Army out of India. Consequently, the gift of local rank to the British Officers in India, to put them on a par with India Officers, was sufficient to secure them in their rights and privileges so far as was required by the necessity of the case.

This, however, seems to be no longer so, and we have what looks anomalous,* viz., that the British Officers are, to a certain extent, secured against supersession in India, but they are not so secured out of India, while, as before mentioned, the Indian Officer is secured all over the world.

This will become more important as times moves on. The Indian Officer who will have been promoted to be a Colonel in India by a Brevet which is good all over the world, will, if cast on service in China, Australia, Europe, or America, with a British Officer, find the latter of a rank inferior to that which he holds, because the British Officer will have enjoyed only local rank in India to put him on a par with Indian Officers in that country, the consequence being that he has not advanced in brevet rank because of the local character of the rank he held in India.

I am to observe, that if it be said in reply, that the two classes of Officers cannot come into collision out of India, a recent experience proves the negative of such a proposition. Thus, it was seen in the Crimea and in Turkey in 1854, 55, 56, that Indian Officers were largely used for the public service; this took place when there was apparently an absolute official bar between the Honourable East India Company's service and that of Her Majesty's. If this was so under the circumstances of those days, what, His Excellency enquires, will take place should England be again engaged in a serious struggle, now that the amalgamation of the Indian and British Armies has become a fact? There cannot be a doubt, His Excellency conceives, that, if demanded by the Service of the country, the Indian Officers would be used freely in high and low situations, and would therefore come into immediate contact with the British Officers, and command, and be commanded by them. It is impossible to conceive any other result from the present arrangements. It is, however, unnecessary to travel beyond the late war in China, and the Indian regiments now returning from the China station, for illustration of what has been suggested.

The point, therefore, to which his Excellency has invited attention is not an imaginary one of Army Lists, but one which affects the Officers of the Army in every rank.

The train of reasoning which has been followed, opens out, in Sir W. Mansfield's opinion, a further large question deserving consideration.

The argument has hitherto been directed to the matter of Lieutenant-Colonels, as affected by a recent ruling of the Right Honourable the Secretary of State, which, it is believed, is not in accordance with the Royal Warrant above alluded to. But we have now, Sir W. Mansfield would observe, to discuss the result apparent from the general working of the regulations affecting Staff Corps promotion, and that of the local Indian Officers, when compared with what has been done for

* *Vide* Despatch of 17th June, 1864, par. 70. The question was lately put by Lieut.-Colonel Martin, Her Majesty's 4th Foot, as to whether the local rank secured to him by par. 70 would count towards the attainment of the rank of Brevet-Colonel. The answer was obvious that the rank being local could carry no such consequence with it. Lieut.-Colonel Martin's question is however an apt illustration of what is advanced in the text, and shows what must be the feeling of the Field Officers of the British Army when they come to understand the bearing of the Indian Regulation on their own relative positions and interests.

the Officers of the British Line Regiments, for the purpose of placing them on a par, as it is supposed, with the former. Thus, the promotion of the Staff Corps and the local Indian Officers is effective, and carries precedence with it, and therefore power of command wherever the holders of it are thrown on service. This is so, whether the gentlemen concerned are Lieutenant-Colonels, Majors, or Captains, and is absolutely demonstrated to be so by the Secretary of State's ruling, which has given rise to this letter, and quoted in paragraph 2.

It is hardly necessary to repeat that the Line Officers who receive their local rank in India, while, as before said, guarded in India, will be superseded in the rest of the world, and this not nominally, but effectually with regard to what has been said above, as illustrated by the case of the Crimea.

Sir W. Mansfield would further point out that the conclusion thus arrived at affects the entire body of Her Majesty's Regular Army.*

His Excellency would therefore most respectfully and deferentially submit for the consideration of the Government of India and of Her Majesty's Government, that the measures recently directed in the reorganization of the Indian Forces have unexpectedly come to interfere with the relative position of the Officers of the British Army at large, a supersession having been involved, to guard against which has ever, His Excellency believes, been the object of the most anxious care of the supreme authorities in England.

As shown before, the device of local rank, which sufficed for former days, seems to fail entirely in the circumstances of the present time, when the privileges appertaining formerly to the Indian Officer in India alone have been guaranteed to him by Her Majesty's Commission and Brevet in the four quarters of the globe.

If, then, the case has been made out, that a supersession of the Officers of the British Army has unexpectedly taken place, and that this is so is shown by the late local Brevet conferred on 148 British Officers in India, there would seem, Sir W. Mansfield ventures to observe, but one remedy. That remedy, his Excellency believes, can only be found in causing the regulations which have been adopted for the benefit of the Indian Service in being made applicable to all branches of Her Majesty's Armies wherever serving, viz.: by Brevet promotion according to provisions of the Staff Warrant, the same being made retrospective to date of institution of Staff Corps.

The Commander-in-Chief further desires me take this opportunity of suggesting that Her Majesty's Government may be moved to embody the resolution which may be ultimately arrived at on this important subject in the form of a Royal Warrant.

Some such measure would seem to his Excellency to be necessary, as it is doubtful whether arrangements which are apparently at variance with existing Royal Promotion Warrants can be legally executed. However this may be, it is obvious that a revision of the Warrants in conjunction with the rules for Staff Corps and other promotion, and the recent despatches of the Right Honourable the Secretary of State, has become a necessity. Sir W. Mansfield would venture to hope that, whenever such revision of the Warrants may take place, their provisions as regards promotion may, as in the Warrants of 14th October, 1858, and 31st January, 1859, be framed upon a principle of uniformity.

I have, &c.,

(Signed) E. HAYTHORNE, Colonel,
Adjutant-General.

[Enclosure 4 in No. 1.]

EXAMPLES.

Lieut.-Colonel A. Turner, Staff Corps.—This Officer is a Major in the cadre of his regiment, a Lieut.-Colonel in the Staff Corps, and on the 18th February, 1866, he will become a Colonel, although he has not held a qualifying appointment in the rank of Lieut.-Colonel for one day.

This Officer will supersede all Lieut.-Colonels of the British Army of a date prior to 18th February, 1861.

Lieut.-Colonel G. Verner, Staff Corps.—Ditto, ditto, ditto.

Lieut.-Colonel Waterman, a Captain in the cadre of the 13th Native Infantry, and Brevet Lieut.-Colonel of 11th June, 1864. This Officer has superseded many Captains, all the Majors of the British Army, and all Lieut.-Colonels of a date subsequent to 11th June, 1864.

Lieut.-Colonel W. G. Hicks, a Captain in the cadre of the 22nd Native Infantry, Brevet Lieut.-Colonel of 1st September, 1864. This Officer supersedes many Captains, all the Majors, and a number of Lieut.-Colonels of the British Army.

Lieut.-Colonel Duvaal, Major in the cadre of the 34th Native Infantry, and Brevet Lieut.-Colonel of 13th June, 1863, has superseded many Captains, all the Majors and Lieut.-Colonels of a date subsequent to 1st September, 1863.

Brevet-Major F. Duffin, Second Lieutenant in the cadre of the 22nd Native Infantry, has superseded all the Captains in the British Army, and the Majors of a date subsequent to 29th December, 1864.

* Sir Wm. Mansfield is assured, by a reference to Hart's last Annual Army List, that under the operations of the rules referred to, about this time next year, the supersession of Officers of the British Army will involve not less than 82 Lieut.-Colonels, 50 Majors, 223 Captains, which supersession will take effect in the Field when the Officers of both services are serving together out of India. It is further observed, that unless the British Army be augmented, the supersession will gradually increase every year, more particularly in the Ordnance Corps and non-purchase Regiments of the Line.

An Appendix, conveying illustration of the statement made in this note, is annexed.—See Enclosure 4.

Lieut.-Colonel W. Q. Pogson is a Captain in the cadre of the 43rd Native Infantry, has superseded many Captains, all the Majors and Lieut.-Colonels of a date subsequent to 12th December, 1864, in the British Army.

Lieut.-Colonel W. C. Watson is a Captain in the cadre of the 47th Native Infantry, has superseded many Captains, all the Majors and Lieut.-Colonels of a date subsequent to 24th February, 1865, in the British Army.

[Enclosure 5 in No. 1.]

From the Adjutant-General to the Secretary to the Government of India, Military Department.

Promotions. No. $\frac{503}{E}$

Head-Quarters, Simla,
12th July, 1865.

Sir,

In returning the enclosures of your docket, No. 54, dated the 24th ultimo, I am directed by the Commander-in-Chief to state, for the information of Government, that the question raised by the Madras Government seems to have been clearly settled by the decision of the Right Honourable the Secretary of State for India, in his despatch, No. 157, of 11th May last, to the address of the Governor-General.

2. Sir William Mansfield, however, concurs with the late Commander-in-Chief of the Madras Army in thinking that if the mere rank of Lieutenant-Colonel for five years is sufficient to qualify an Officer of the Indian Service for promotion to Colonel, the latter rank will be attainable upon a principle differing greatly from the rules which regulate promotion to that grade in the British Service.

His Excellency's further opinions on this subject are contained in a letter, dated 12th instant, No. $\frac{502}{E}$, which I have been directed to submit for the consideration of the Government.

I have, &c.,
(Signed) E. Haythorne, Colonel,
Adjutant-General.

No. 2

The Marquis of Hartington to the Military Secretary, India Office.

7641/209.

War Office,
13th December, 1865.

Sir,

I am directed by Earl de Grey and Ripon to transmit to you, for the consideration of the Secretary of State for India in Council, the enclosed correspondence, received from the Field-Marshal Commanding-in-Chief, representing the manner in which the position of the Officers of the Regular Army has been injuriously affected by the system of promotion which has been introduced in the several Staff Corps and local Indian Armies, and to request you will move Sir Charles Wood to favour Lord de Grey with his views thereon.

See No. 1 and 5 Enclosures.

I have, &c.,
(Signed) Hartington.

No. 3.

Lieut.-General W. F. Forster, K.H., to the Under Secretary of State for War.

Horse Guards,
22nd January, 1867.

Sir,

I am directed by the Field-Marshal Commanding-in-Chief to forward you a copy of letter, of the 6th October last, from the Commander-in-Chief in India, submitting a duplicate of his despatch dated 15th August, 1865, on the subject of the supersession of Officers of Her Majesty's British Forces by those of the Indian Armies.

The papers referred to, together with a copy of his Excellency's subsequent despatch of the 31st of the same month, were forwarded to you, for submission to the Secretary of State for War, with my letter dated 21st October, 1865; and as Sir William Mansfield has again brought the subject forward, I am to request you will be so good as to move General Peel to favour His Royal Highness with his opinion on the same.

I have, &c.,
(Signed) W. F. Forster.

[Enclosure in No. 3.]

No. 6451.

Head-Quarters, Simla,
6th October, 1866.

Sir,

FEARING that my letter of the 15th August, 1865, on the subject of the supersession which the senior Officers of Her Majesty's British Forces are suffering by the more rapid promotion of the Officers of the Indian Armies, may have miscarried, I now do myself the honor to forward a duplicate thereof, and to request you to have the goodness to submit the same for the gracious consideration of His Royal Highness the Field-Marshal Commanding-in-Chief, as the evil alluded to in that letter is at present on the increase.

No. 1776. See Enclosure 1 in No. 1.

The Colonels of 1857, of the Local Army of India, have now been very nearly absorbed by promotion to the rank of Major-General.

I have, &c.,
(Signed) W. R. MANSFIELD, General,
Commander-in-Chief in India.

The Military Secretary,
Horse Guards, London, S.W.

No. 4.

Lieut.-General Sir E. Lugard, G.C.B., to the Military Secretary, Horse Guards.

7641/222.

War Office,
25th January, 1867.

Sir,

WITH reference to your letter of the 22nd instant, on the subject of the promotions in the several Staff Corps and Local Indian Armies, and the effect thereof on the position of officers of the Regular Army serving in India; I am directed by Secretary Lieutenant-General Peel to request you will state to the Field-Marshal Commanding-in-Chief, that the former correspondence on this subject was duly sent to the India Office, for the opinion of the Secretary of State for India in Council, to which, however, no answer has yet been received. A reminder has therefore been sent to that Department this day, with a view to an early reply, and which, when received, together with Lieutenant-General Peel's opinion thereon, will be immediately sent to you.

I have, &c.,
(Signed) EDWARD LUGARD.

No. 5.

Lieut.-General Sir E. Lugard, G.C.B., to the Military Secretary, India Office.

7641/222.

War Office,
25th January, 1867.

Sir,

I AM directed by Secretary Lieutenant-General Peel to call your attention to the letter from this Department dated 13th December, 1865, covering a correspondence relative to the promotion of Officers of the several Staff Corps and Local Indian Armies, and to the effect of such promotion on the position of Officers of the Regular Army serving in India, to which no answer has yet been received; and as the same subject has now been again brought to the notice of the Secretary of State for War, by His Royal Highness the Field-Marshal Commanding-in-Chief, I am to request you will move Lord Cranborne to favour General Peel with his opinion thereon as early as convenient, with a view to a reply being given to His Royal Highness for notification to the Commander-in-Chief in India.

I have, &c.,
(Signed) EDWARD LUGARD.

No. 6.

Major-General T. T. Pears, C.B., to the Under Secretary of State for War.

No. 320 $\frac{66}{W}$

India Office, S.W.,
26th January, 1867.

Sir,

LORD HARTINGTON'S letter of the 13th December, 1865, No. 7641/209, having been recently under the consideration of the Secretary of State in Council, I have been instructed

to request you will inform Lieutenant-General Peel, that the question raised in the correspondence forwarded therewith, appears to be one for the consideration of the authorities at the War Office and the Horse Guards.

I have &c.,

(Signed) T. T. PEARS, Major-General
Military Secretary.

No. 7.

Lieut.-General Sir E. Lugard, G.C.B., to the Military Secretary, Horse Guards.

7641/228.

War Office,
28th February, 1867.

Sir,

WITH further reference to your letter of the 22nd ultimo, and previous correspondence, on the subject of the supersession of Officers of the Regular Army by Officers of the late Indian Army; I am directed by Secretary Lieutenant-General Peel to return herewith the enclosures to your letter of the 21st October, 1865, and to request you will move His Royal Highness the Field-Marshal Commanding-in-Chief to favour the Lieutenant-General with an expression of his opinion on each of the several points adverted to therein, with a view to assist him in deciding on the best means of remedying the injustice complained of.

I have, &c.,

(Signed) EDWARD LUGARD

No. 8.

Lieut.-General W. F. Forster, K.H., to the Under Secretary of State for War.

Horse Guards,
19th March, 1867.

Sir,

THE Field-Marshal Commanding-in-Chief has directed me to acknowledge the receipt of your letter of the 28th ultimo, requesting to be furnished, for the Secretary of State's information, with an expression of His Royal Highness's opinion on the subject of the supersession of Officers of the Regular Army by those of the Indian Service, which has been brought to notice by the Commander-in-Chief in India.

In reply, I am desired to state that the question is one of extreme difficulty, and though it is the case, as represented by Sir William Mansfield, that the Colonels of the British Army are experiencing supersession by the promotion of Indian Colonels junior to them as such, the remedy proposed by his Excellency, viz., that of reverting to the old system of Fane Brevets, and of having recourse to that of General Brevets made applicable to all branches of Her Majesty's Armies wherever serving, based on the provisions of the Staff Corps Warrant, would prove so extremely inconvenient and produce so much embarrassment and confusion that His Royal Highness considers it would be most inexpedient to attempt to readjust the inequalities brought to notice by the adoption of such remedial measures.

It must be remembered, His Royal Highness observes, that the present state of promotion in the Indian Army is quite exceptional and abnormal, brought about by various causes, chiefly, however, by the retirement of a large number of senior officers under exceptional circumstances, and by the formation of the Staff Corps on the reorganization of the Indian Armies. By those retirements, which affected the grade of Colonel more than the Generals, the number of the former rank was much reduced, and their proportion to the establishment of General Officers became considerably less than that which previously obtained and which exists in the British Army.

But, as has been remarked, this decrease of Colonels was quite exceptional, and will not go on; on the contrary, since Sir W. Mansfield wrote on the subject, their numbers have largely increased, and every day the due proportion of Colonels and other grades of Field Officers in relation to the Indian Establishment of Generals is more nearly approximating, and will, before very long, be completely re-established.

His Royal Highness would further draw attention to the fact, that though the promotion of the Indian Colonels to be Major-Generals, has been of late more rapid than in the British

Army, no practical hardship is entailed thereby on the latter, for whatever may be the difference of the rate of promotion in the two Services, no interference in the relative number of Divisional and Brigade Commands is permitted, the same proportion being reserved for each Service under all circumstances in time of peace, and in time of war selection is made of the most eligible and competent Officers.

In this view, and considering also that in the British Army supersession among the Officers is constantly occurring and cannot be avoided, His Royal Highness is unable to recommend the adoption of any scheme for the readjustment of the relative rank of the two Services, which His Royal Highness believes will soon rectify itself, and without any exceptional interference, which he objects to as unnecessary in his opinion, and extremely inconvenient and embarrassing.

If the Secretary of State concurs in these views, His Royal Highness proposes to forward a copy of this letter to India, for Sir William Mansfield's information.

I have, &c.,
(Signed) W. F. Forster.

No. 9.

Major-General T. T. Pears, C.B., to the Under Secretary of State for War.

No. 1161 $\frac{190}{W}$.

India Office, S.W.,
30th March, 1867.

Sir,

I am directed by the Secretary of State for India in Council, with reference to the second and four following clauses of the Royal Warrant of the 15th June, 1864 (Cir. No. 867), to request you will bring to the notice of the Secretary of State for War that the promotion of Colonel Sir H. M. Durand, K.C.S.I., of the Royal (late Bengal) Engineers, to the rank of Major-General was notified in the London Gazette of 29th instant.

2. As Sir H. M. Durand is the last of the Officers of the late Indian Engineers who had attained the rank of Colonel previously to the 18th of February, 1861, the time has arrived for making the arrangements provided for in the clauses of the Warrant above referred to.

3. The establishment of Officers allotted, according to the Royal Warrant, to the Indian Engineers, will be as follows:—

Generals	2
Lieutenant-Generals	4
Major-Generals	6
Total	12

4. The Officers of Engineers of the three Presidencies at present holding the above grades, are as follows:—

General.

Sir John Cheape, G.C.B.	Bengal ..	6th December, 1866.

Lieutenant-General.

Edward Garstin	Bengal ..	21st December, 1865.

Major-General.

Henry Goodwyn	Bengal ..	26th June, 1860.
Sir Robert Napier, K.C.B.	Bengal ..	15th Feb. 1861.
Walter Scott	Bombay ..	5th Sept. „
Sir Arthur Cotton, K.C.S.I.	Madras ..	14th April, 1862.
William Barclay Goodfellow	Bombay ..	6th „ 1863.
William Erskine Baker..	Bengal ..	2nd Aug. 1865.
Henry Blois Turner	Bombay ..	21st March, 1867.
Sir Henry Marion Durand, C.B., K.C.S.I.	Bengal ..	11th „ „

5. The two Officers of the rank of Colonel first for promotion to the rank of General Officer, are—

Edward Lawford	Madras ..	18th February, 1861.
Charles William Tremenhere, C.B. ..	Bombay ..	18th „ „

6. I am to request that the necessary steps may be taken for making the promotions to complete the establishment of General Officers in the several grades, and for placing the whole of the Officers of Indian Engineers, including General Officers, on the General List of the British Army as provided for in clause 5 of the above Warrant.

7. I am directed to add that the Government of India will be instructed to carry out the provisions of the Warrant as regards the removal of the names of these Officers from the General List of the Indian Army, and the reduction of the number of General Officers on that list to the number laid down in clause 6 of the above Warrant.

I have, &c.
(Signed) T. T. PEARS, Major-General,
Military Secretary.

No. 10.

Lieut.-General Sir E. Lugard, G.C.B., to the Military Secretary, Horse Guards.

7641/232.

War Office,
3rd April, 1867.

Sir,

WITH reference to your letter of the 19th ultimo, on the subject of the supersession of Officers of the Regular Army by Officers of the Indian Army, I am directed by Secretary Sir John Pakington to request you will state to the Field-Marshal Commanding-in-Chief that he concurs in the views expressed by His Royal Highness in this question, and in the proposed communication to Sir William Mansfield.

I have, &c.,
(Signed) EDWARD LUGARD.

No. 11.

Lieutenant-General Sir E. Lugard, G.C.B., to the Military Secretary, Horse Guards.

7641/233.

War Office,
15th April, 1867.

Sir,

I AM directed by Sir John Pakington to transmit to you, for submission to the Field-Marshal Commanding-in-Chief, the enclosed letter from Major-General Pears, on the subject of certain promotions required to complete the Establishment of General Officers of Engineers, and for placing the whole of the Officers of Indian Engineers (including General Officers) on the General List of the British Army, as provided by the Royal Warrant of 15th June, 1864; and to request you will move His Royal Highness to favour Sir J Pakington with any observations he may be pleased to offer thereon.

Dated 30th March, 1867. See No. 9.

I am at the same time to suggest that the proposed promotions, if correct, may be carried out in the usual manner.

I have, &c.
(Signed) EDWARD LUGARD.

No. 12.

Lieut.-General W. F. Forster, K.H., to the Under Secretary of State for War.

Horse Guards,
30th April, 1867.

Sir,

I AM directed by the Field-Marshal Commanding-in-Chief to acknowledge the receipt of your letter of the 15th instant, forwarding a copy of a communication, of the 30th ultimo, from the India Office, on the subject of completing the establishment of General Officers of Engineers, and of placing the whole of the Officers of Indian Engineers (including General Officers) on the general list of the British Army, as provided by the Royal Warrant of 15th June, 1864.

In reply I am desired by His Royal Highness to state, for Sir John Pakington's information, that the course suggested by the Secretary of State for India is in accordance with the

terms and conditions of the Warrant referred to, and that the proposed promotions will be at once carried into effect.

I have &c.,
(Signed) W. F. FORSTER.

No. 13.

Lieut.-General Sir E. Lugard, G.C.B., to the Military Secretary, India Office.

7611/234.

War Office,
23rd May, 1867.

Sir,

WITH reference to your letter of the 30th March, 1867, on the subject of completing the establishment of General Officers of Engineers, and of placing the whole of the Officers of Indian Engineers (including General Officers) on the general list of the British Army, as provided by the Royal Warrant of 15th June, 1864. I am directed by Secretary Sir John Pakington, to request you will state to the Secretary of State for India in Council, that the Commander-in-Chief has signified that the course suggested in your letter has been carried out.

I have, &c.,
(Signed) EDWARD LUGARD.

No. 14.

Major-General T. T. Pears, C.B., to the Under-Secretary of State for War.

No. 2582 $\frac{390}{W}$.

India Office, S.W.,
24th April, 1868.

Sir,

I AM directed by the Secretary of State for India in Council to request that you will bring to the notice of the Secretary of State for War that the promotion of Colonel J. K. Whistler, of the Royal (Madras) Artillery, to the rank of Major-General, appeared in the London Gazette of the 17th instant.

2. As Major-General Whistler is the last of the Officers of the late Indian Artillery, who had attained the rank of Colonel previous to 18th February, 1861, it will be necessary to make the arrangements provided for in the Regulations attached to the Royal Warrant of 15th June, 1864.

3. The establishment of General Officers, allotted by the Warrant to the Indian Artillery, is as follows:—

Generals	5
Lieut.-Generals	8
Major-Generals	13
	26

4. The Officers of Artillery of the three Presidencies, at present holding the above grades are:—

Generals, 6.

E. M. G. Showers	Madras ..	4th March, 1858.
G. Swiney	Bengal ..	15th May, 1859.
Sir G. Pollock, G.C.B., G.C.S.I. ..	Bengal ..	17th „ „
Sir A. Lindsay, K.C.B.	Bengal ..	11th Sept. „
J. G. Griffith	Bombay ..	17th „ 1866.
Sir P. Montgomerie, K.C.B. ..	Madras ..	1st March, 1867.

Major-Generals, 24.

J. Alexander, C.B.	Bengal	18th May,	1856.
J. J. Lane, C.B.	Bengal	8th June	„
E. Huthwaite, C.B.	Bengal	14th May,	1857.
Sir A. Wilson, Bart., G.C.B.	Bengal	14th Sept.	„
G. Campbell, C.B.	Bengal	4th July,	1858.
C. Grant, C.B.	Bengal	14th Oct.	„
G. Twemlow	Bengal	17th May,	1859.
R. Horsford	Bengal	6th Feb.	1860.
J. Fordyce	Bengal	29th April,	1861.
A. Rowland	Bombay	6th Jan.	1863.
Sir W. M. Coghlan, K.C.B.	Bombay	14th April,	„
C. S. Reid	Bengal	24th Jan.	1865.
R. C. Moore, C.B.	Madras	29th March,	„
G. Balfour, C.B.	Madras	5th June,	„
C. Lucas	Bombay	26th April,	1866.
J. W. Croggan	Madras	12th June,	„
J. Abbott	Bengal	19th „	„
F. Turner, C.B.	Bengal	18th Jan.	1867.
Sir H. Tombs, K.C.B., V.C.	Bengal	11th March,	„
H. W. Trevelyan, C.B.	Bombay	25th „	„
J. Brind, C.B.	Bengal	1st June,	„
R. R. Kinleside	Bengal	14th July,	„
A. Huyshe	Bengal	31st Oct.	„
J. K. Whistler	Madras	6th March,	1868.

5. The total number of these Officers (34) being in excess of the Establishment laid down in the Regulations, it will be necessary, as vacancies occur, to effect the necessary reduction, in the manner provided for in clause 3, but the number in the particular grade of Lieut.-General being less by four than the number allowed, the four senior Major-Generals will be at once promoted to that grade.

6. I am directed to request that the necessary measures may be taken for making the promotions above-named, and for placing the whole of the Officers of the Indian Artillery on the general List of the British Army, as provided for in Clause 5 of the Regulations.

7. Agreeably to Clause 6 of the Regulations, the present establishment of General Officers for the Indian Armies (197) will be reduced by 24, and it will remain at the number of 173 until the contingency provided for in Clause 10 shall occur.

8. It appears desirable that the present opportunity should be taken to revise the relative number of the different grades of General Officers of the Indian Establishment. The former Establishment of the Indian Army (220), as fixed by the Warrant of 31st January, 1859, was divided into—

25 Generals,
50 Lieut.-Generals,
145 Major-Generals.

Taking these numbers as a basis, Sir Stafford Northcote proposes to divide the present Establishment of 173 into—

20 Generals,
40 Lieut.-Generals,
113 Major-Generals.

9. Should Sir John Pakington see no objection to this arrangement, the necessary promotions amongst the Indian Officers will be made in the usual way, so soon as the removal of the Artillery Officers from the List has been notified.

I have, &c.,
(Signed) T. T. Pears, Major-General,
Military Secretary.

No. 15.

Lieut.-General Sir E. Lugard, G.C.B., to the Military Secretary, Horse Guards.

20, Gen. No., 755.

War Office,
30th May, 1868.

Sir,

I AM directed by Secretary Sir J. Pakington, to transmit to you, for submission to the Field-Marshal Commanding-in-Chief, the accompanying letter from the Military Secretary to the Secretary of State for India in Council, setting forth the arrangements which have now become necessary for carrying out certain provisions of the Indian Amalgamation Warrant of 15th June, 1864, Cir. No. 867, and to request you will move His Royal Highness to favour Sir J. Pakington with any observations he may be pleased to offer thereon.

Dated 24th April, 1868. See No. 14.

I am at the same time to suggest that the proposed promotion,* *if correct*, may be carried out in the usual manner.

*4 Maj.-Generals to be Lieut.-Generals.

I have, &c.,
(Signed) EDWARD LUGARD.

No. 16.

Lieut.-General W. H. Forster, K.H., to the Under Secretary of State for War.

Horse Guards,
19th June, 1868.

Sir,

HAVING laid before the Field-Marshal Commanding-in-Chief your letter of the 30th ultimo, I am directed to acquaint you that the arrangements proposed in the India Office letter of the 24th April, for the transfer from the Indian General List to a separate list of the Officers of the late Indian Artilleries, and the completion of the list of Indian Generals consequent on the promotion of Colonel Whistler, Royal (late Madras) Artillery, to be Major-General, appear to be in accordance with the provisions of the Royal Warrant of the 15th of June, 1864, and His Royal Highness concurs in them accordingly.

His Royal Highness further desires me to express his concurrence in Sir Stafford Northcote's proposal to divide the Indian Establishment of General Officers as follows, viz. :—

20 Generals,
40 Lieutenant-Generals,
113 Major-Generals.

Whilst concurring in these arrangements, the Duke of Cambridge desires me, however, to suggest that in view to a consideration of the question as affecting the British Army, the promotions and transfers may be deferred for a short time longer.

On looking into the effect of these arrangements in their relation to the British Army, His Royal Highness has not failed to be struck with the great advantage the Officers of the Indian Army have derived from them in comparison with the British, for on comparing the dates of Commission of the two Services respectively, His Royal Highness finds that the Commission as Colonel, of the junior Officer of the Indian Army about to be promoted to the rank of Major-General, bears date 10th June, 1862, whilst in the British Army there are still Colonels of 1854 yet unpromoted. No less than 230 Colonels of the British Army will thus be superseded, and for some time to come, this supersession will continue to the great injury of the Officers of the British Service.

His Royal Highness is aware that the promotion now accruing to the Indian List is the result of the measures which were deliberately determined on and provided for in the Royal Warrant of the 15th June, 1864; he cannot at the same time but reflect however that the immediate effects of those measures are very detrimental to the interests of the Officers of the British Service.

After giving much consideration to the subject, His Royal Highness has arrived at the opinion that it would be very desirable to adopt some measure which would, at the same time, give an impetus to the promotion of the British Officers, and lessen the disadvantages at which they stand with reference to those of the Indian Service; and if Sir John Pakington should concur with him in this opinion, His Royal Highness would gladly discuss the subject with him before the promotions about to take place on the Indian List are Gazetted.

I have &c.,
(Signed) W. F. FORSTER.

No. 17.

Lieutenant-General W. F. Forster, K.H., to the Under Secretary of State for War.

Horse Guards,
9th July, 1868.

Sir,

In continuation of my letter of the 19th ultimo, and with reference to the discussion on the subject at the War Office Meeting of the 30th idem, I am now directed by the Field-Marshal Commanding-in-Chief to offer the following remarks on the supersession which the Colonels of the British Army are suffering by the very rapid promotion to Major-General of Officers of the Indian Service.

The question that presents itself is what measures can be adopted to mitigate or alleviate the evil.

The only absolute remedy would be to make the rank of all Generals on the Indian List local until such time as they would fall in at their proper date on the British List, that is, when the Colonel of next senior date on the British List, became a Major-General the local rank held by the Indian Officer should become Army rank; and that Major-Generals or Colonels of Her Majesty's British Army appointed to commands in India should have local rank in that country, placing them in their proper relative positions with the Generals of the Indian Army.

This, however, would be a retrograde measure, and one so much in disaccordance with what has already been established by Royal Warrant, that His Royal Highness conceives it would be objectionable to entertain it.

To meet a great question of this nature it does not appear possible, whilst maintaining the interests and rights conferred on the Officers of the Indian Army by Royal Warrant, to ensure those of the British Army without at the same time introducing changes involving considerable expenditure.

It will be remembered that eventually the British Establishment of General Officers will be augmented by about 90 more or less, the Indian List being concurrently reduced.

This augmentation of the British Establishment will commence in about three or three and a-half years time, *i.e.*, when Colonel Salmon, the senior Colonel on the British Amalgamated List would, had he remained on the Indian List, be promoted to Major-General, and will go on, as each Indian Officer on the Amalgamated List would in like manner be promoted on the Indian List.

It is suggested whether that period might not be anticipated, and the British establishment of Generals at once be augmented to its future complement by the immediate promotion of 90 British Colonels to be Major-Generals.

This would involve an immediate annual expenditure of about 40,000*l.* If this be considered too large an immediate expenditure, the proposed promotions might be made to extend over a certain number of years, say, by adding 12 additional Generals to the British Establishment annually, until the whole number (90) are promoted.

Should either of these schemes be entertained, the interests of the Officers of the Royal Artillery and Royal Engineers might be maintained, as far as possible, by placing each Officer of those lists on his promotion to Major-General in the exact place among the Major-Generals of the Line which he held relatively with them as Colonel, *i.e.*, by antedating his Commission.

It is not pretended that these measures would obviate supersession. This could only be effected by at once promoting the whole of the 221 Colonels referred to in my letter of 19th ultimo, but it would at the least alleviate it and give an impetus to the British List which would compensate in some measure for the unequal rate at which the Indian Officers have been advanced.

I have, &c.,
(Signed) W. F. Forster.

No. 18.

Lieut.-General Sir E. Lugard, G.C.B., to the Military Secretary, India Office.

20, Gen. No., 756.

War Office,
16th July, 1868.

Sir,

With reference to your letter of the 24th April last, on the subject of the arrangments for the promotion of certain General Officers, and for placing the whole of the Officers of the

late Indian Artillery on the General List of the British Army, as provided for in Clause 5 of the Regulations of 15th June, 1864; I am directed by Secretary Sir John Pakington to request you will state to the Secretary of State for India, in Council, that this question having been discussed at a War Office meeting, at which the Field-Marshal Commanding-in-Chief was present, and attention having been drawn to the supersession of Colonels of the British Army by the promotion of Colonels of the Indian Army to the rank of Major-General, it was decided that this subject should be considered by a Committee consisting of one Officer from the Horse Guards, one from this Department, and one from the India Office; and I am to request you will move Sir Stafford Northcote to acquaint me with the name of the Officer whom he may select to serve on this Committee.

Major Marvin has been nominated as the member for this Department. The name of the Officer from the Horse Guards has not yet been notified.

I have, &c.,
(Signed) EDWARD LUGARD.

No. 19.

Lieut.-General Sir E. Lugard, G.C.B., to the Military Secretary, Horse Guards.

20, Gen. No., 756.

War Office,
16th July, 1868.

Sir,

WITH reference to the discussion at the War Office meeting, held on the 30th ult., relative to the supersession of Colonels of the British Army by Colonels late of the Indian Army, and the decision "that the question should be considered by a Committee to be "appointed from the offices concerned": I am directed by Secretary Sir John Pakington to request you will move the Field-Marshal Commanding-in-Chief to acquaint me with the name of the Officer whom he may be pleased to select to represent the Horse Guards.

The Secretary of State for India, in Council, has been requested to name a member from his Department; and Major Marvin has been nominated as the member from this Office.

I have, &c.,
(Signed) EDWARD LUGARD.

No. 20.

Lieutenant-General W. F. Forster, K.H., to the Under Secretary of State for War.

Horse Guards,
17th July, 1868.

Sir,

I AM directed by His Royal Highness the Field-Marshal Commanding-in-Chief to acknowledge the receipt of your letter of the 16th instant, relative to the appointment of a Committee to consider the question of the supersession of Colonels of the British Army by Colonels late of the Indian Army, and to request you will inform the Secretary of State for War that His Royal Highness has selected Colonel C. R. Egerton, Deputy Adjutant-General, to represent this Department as a Member of the Committee in question.

I have, &c.
(Signed) W. F. FORSTER.

No. 21.

Lieutenant-General Sir E. Lugard, G.C.B., to the Military Secretary, India Office.

20, Gen. No., 758.

War Office,
1st August, 1868.

Sir,

WITH reference to my letter of the 16th ultimo, I am directed by Secretary Sir John Pakington, to request you will move the Secretary of State for India in Council, to favour him, as early as convenient, with the name of the Officer who is to represent the India Office on the Committee which is to consider the question of the Supersession of Colonels of the British Army by Officers of the late Indian Army.

Colonel C. R. Egerton, Deputy Adjutant-General, has been nominated by the Horse Guards to represent that Department.

I have, &c.
(Signed) EDWARD LUGARD.

No. 22.

Major-General T. T. Pears, C.B., to the Under Secretary of State for War.

No. 4406 $\frac{707}{W}$.

India Office, S.W.,
7th August, 1868.

Sir,

I AM directed by the Secretary of State for India in Council to acknowledge the receipt of your letters of the 16th ultimo and 1st instant, respecting the measures to be adopted for the purpose of carrying out the provisions of the Royal Warrant of the 15th of June, 1864, with reference to the transfer of the whole of the Royal (late Indian) Artillery Officers to the General List of the British Army.

2. In regard to the proposition that a Committee should be appointed to consider the general question of the supersession of Colonels of the British Army, by the promotion of Colonels of the Indian Army to the rank of Major-General, I am desired to state that Sir Stafford Northcote has no objection to such a course being adopted, and that he has appointed Mr. G. E. Cochrane, late Assistant Military Secretary in this office, to represent the India Office on that Committee.

3. *I am, however, directed to add that, in Sir Stafford Northcote's opinion, it is very* undesirable that a different mode of procedure should be followed with reference to the officers of Royal Artillery, from that which was taken last year, in the case of the Royal Engineers, on the occurrence of a similar contingency, and under the same clauses of the Royal Warrant. I am, therefore, desired to urge that the course suggested in the letter from this office, dated the 24th of April last, should be followed, without waiting for the report of the Committee which is about to be appointed.

I have, &c.,
(Signed) J. PATTISON THOM, Assistant,
Military Department.

No. 23.

Major-General the Right Hon. Sir H. K. Storks, G.C.B., G.C.M.G., to the Military Secretary, India Office.

20, Gen. No., 759.

War Office,
10th August, 1868.

Sir,

WITH reference to your letter of 7th instant, I am directed by Sir John Pakington to acquaint you, for the information of Sir S. Northcote, that the first meeting of the Committee on the general question of the Supersession of Colonels of the British Army by Colonels of the late Indian Army, will take place at this Office, on Wednesday the 12th instant, at 12 o'clock, when Mr. Cochrane's attendance will be required.

I am to add that the question raised in the 3rd paragraph of your letter relating to the Artillery Officers, has been referred for the consideration of His Royal Highness the Field-Marshal Commanding-in-Chief.

I have, &c.
Signed) H. K. STORKS.

No. 24.

Major-General the Right Hon. Sir H. K. Storks, G.C.B., G.C.M.G., to the Military Secretary, Horse Guards.

20, Gen. No., 759.

War Office,
10th August, 1868.

Sir,

WITH reference to your letter of 17th ultimo, I am directed by Secretary Sir John Pakington to request you will state to the Field-Marshal Commanding-in-Chief, that Mr. Cochrane, late Assistant Military Secretary, has been nominated to represent the India Office on the Committee, which is to consider and report on the general question of the supersession of Colonels of the British Army by Colonels of the late Indian Army.

The Committee will meet at this Office on Wednesday next the 12th instant at 12 o'clock, when Colonel Egerton's attendance is requested.

Dated 7th Aug., 1868. See No. 22.

I am at the same time to call your attention to the proposition in the 3rd paragraph of the enclosed letter from the India Office, and to request you will move His Royal Highness to favour Sir John Pakington with his opinion thereon.

I have, &c.,
(Signed) H. K. STORKS.

P.S.—It is requested that the enclosure may be returned.

No. 25.

Colonel C. R. Egerton, Deputy Adjutant-General, Horse Guards, to the Under Secretary of State for War.

War Office,
5th January, 1869.

Sir,

I HAVE the honour to forward for submission to the Secretary of State for War the Report of the Committee appointed by Sir John Pakington, to consider the question of the supersession of the Colonels of Her Majesty's Army by the Colonels of the late Indian Forces.

I have, &c.,
(Signed) C. R. EGERTON, D.A.G.,
President.

[Enclosure in No. 25.]

REPORT of the Committee apointed to enquire into the question of the Supersession of British Colonels by Colonels of Her Majesty's Indian Army, dated War Office, 5th January, 1869.—[See Parliamentary Paper No. 283, Session 1869, for copy of this report.]

No. 26.

His Royal Highness the Field-Marshal Commanding-in-Chief to the Right Hon. the Secretary of State for War.

Horse Guards,
5th March, 1869.

Sir,

I HEREWITH forward for your information three letters from the officers named in the margin,* representing the supersession to which they are being subjected by the promotion of Colonels of the Indian Army to be Major-Generals who are very considerably their juniors.

As this supersession has now been going on for a long period, and will be of constant future occurrence, it appears to me to be a question of the greatest importance as affecting the

* Colonel de Salis, C.B., 28th January, 1869; Colonel Sir E. H. Greathed, K.C.B., 3rd March 1869; Colonel H. J. Warre, C.B., Half-Pay 57th Foot, 3rd March, 1869. [See Parliamentary Paper No. 202, of Session 1869, for copies of these letters.]

interests of the whole body of officers of the British Army, and I consider it one which merits your attentive consideration.

You are aware that a Committee was assembled some months since for the purpose of considering this subject, and that their Report on the same was submitted at the beginning of January.

I am, Sir,
Yours,
(Signed) GEORGE.

No. 27.

Lieutenant-General Sir E. Lugard, G.C.B., to the Military Secretary, India Office.

20, Gen. No., 808.

War Office,
24th March, 1869.

I AM directed by Mr. Secretary Cardwell to request you will state to the Secretary of State for India in Council that great complaints have been, and are continually, made of the supersession of officers in the British Establishment by the more rapid promotion given to officers on the Indian List under the provisions of the Warrant of 15th January, 1864; and that it appears to Mr. Cardwell that it would mitigate, though not remove, the cause of grievance to which this supersession gives rise, if each Colonel on the British Establishment, when promoted to the rank of Major-General, were restored to his relative place, and took his position on the General List according to his seniority as Colonel, the same course being adopted by mean s of ante-dates in the case of the present General Officers whose Commissions as Colonels bear date on, or after, the 28th November, 1854.

Mr. Cardwell trusts that the Duke of Argyll will agree with him that this partial measure of justice ought to be conceded to the officers on the List of the British Establishment.

I have, &c.,
(Signed) EDWARD LUGARD.

No. 28.

The Military Secretary, India Office, to the Under Secretary of State for War.

India Office, S.W.
27th March, 1869.

Sir,

I AM directed by the Secretary of State for India in Council, to request, with reference to your letter of the 24th instant, that I may be informed of the date from which it is proposed to give effect to the arrangement therein submitted, in view to mitigate the grievance to Officers of the British Establishment, caused by their supersession by Officers of the Indian List, consequent upon the more rapid promotion of the latter under the provisions of the Warrant of 15th June, 1864.

I have, &c.,
(Signed) J. PATTISON THOM,
For the Military Secretary.

No. 29.

Lieutenant-General Sir Edward Lugard, G.C.B., to the Military Secretary, India Office

20, Gen. No., 814.

War Office,
9th April, 1869.

Sir,

I AM directed by the Secretary of State for War to acknowledge the receipt of your letter of the 27th ultimo, and to state in reply that the arrangement proposed in my letter of the 24th March is to apply to all Officers whose Colonelcies bear date on or after the 28th November, 1854.

I am at the same time to request, with further reference to my letter of the 24th March, that you will state to the Secretary of State for India in Council that, as regards the Officers who have attained the rank of Major-General, Mr. Cardwell recognizes the proposed concession as an act of complete justice to the Officers on the British Establishment; but that, as regards the time during which a superseded Officer continues in the rank of Colonel, the grievance still remains unredressed, and this is the more important portion of the case.

Mr. Cardwell feels that it will be of little use for him to apply to the Lords Commissioners of Her Majesty's Treasury, to sanction any expense for the relief of the Colonels, and, indeed, he does not feel disposed to do so, since the grievance has arisen entirely from changes in the Indian Establishment, over which the Treasury had no control, and in respect to which that Department was not consulted; but he feels that he may appeal with confidence to the Secretary of State for India and his Council to assist in adopting such arrangements as may remove from the Colonels the sense of injustice under which they at present labour. With this view Mr. Cardwell would propose for their consideration, and he trusts for their concurrence, that the provisions of the Royal Warrant of 15th June, 1864, may be reconsidered unless any other way occurs to the Duke of Argyll for remedying the grievance complained of.

I have, &c.,
(Signed) EDWARD LUGARD.

No. 30.

His Royal Highness the Field-Marshal Commanding-in-Chief to the Secretary of State for War.

Horse Guards,
10th April, 1869.

Sir,

REFERRING to my letter of the 5th ult., I think it my duty again to bring to your notice the extensive supersession of Officers of the British Service by those of the Indian Army which is taking place, and which is daily becoming a more serious and grievous question.

My attention has been more immediately drawn to the subject by the promotion of Colonel H. W. Norman, C.B., a very distinguished Officer of the Indian Army, whose advancement to the rank of Major-General is now being submitted to Her Majesty, with a view to its appearance in an early Gazette.

This Officer, a Colonel of 1863, was in the year 1857 a subaltern, and actually serving as such with and under Officers of the British Army, who were at that time Lieut.-Colonels of many years standing, and who are yet far from the rank of Major-General.

I may instance among others the case of Colonel Sir Edward Greathed, K.C.B. In 1857, this Officer, a Lieut.-Colonel of 1854, and a Colonel of 1858, was Commanding a Brigade in the Field, to which Colonel Norman, a subaltern at that time, was attached.

I should be inclined to suggest the suspension of any further promotion of Colonels of the Indian Army, until the question in regard to those of the British Service had been decided on, were it not that I should be adverse from proposing any step tending to deprive Officers of the Indian Army of that which they have been guaranteed by Royal Warrant.

Still the injurious effects of this supersession cannot in my opinion be over-estimated, and I desire to express my earnest hope that the recommendations of the Committee presided over by Colonel Egerton, as compensating in some degree for the supersession to which the Colonels of the British Army are being subjected, may be sanctioned and carried into effect.

I am, Sir,
Yours,
(Signed) GEORGE.

No. 31.

Major-General T. T. Pears, C.B., to the Under Secretary of State for War.

No. 2019 $\frac{366}{W}$.

India Office, S.W.,
16th April, 1869.

Sir,

I AM directed by the Secretary of State for India in Council to acknowledge the receipt of your letter of the 24th ultimo, stating that great complaints have been, and are continually,

made of the supersession of Officers on the British Establishment by the more rapid promotion given to Officers on the Indian List under the provisions of the Warrant of 15th June, 1864, and that Mr. Cardwell proposes, with a view to mitigate the grievance to which the supersession gives rise, that each Colonel on the British Establishment, when promoted to the rank of Major-General, should be restored to his relative place, and take his position on the General List according to his seniority as Colonel, the same course being adopted, by means of an antedate, in the case of the present General Officers whose Commissions as Colonel bear date on or after the 28th November, 1854.

2. In reply, I am desired to request you will bring to the notice of the Secretary of State for War that, in compliance with a suggestion contained in your letter of the 16th July last, a gentleman was nominated by the Secretary of State for India in Council as a member of a Committee assembled to consider the question of supersession complained of, and I am to request that His Grace may be informed of the result of that enquiry, and favoured with a copy of the report, if such shall have been yet submitted. At the same time I am to state that the Duke of Argyll has no objection to offer to the measure which Mr. Cardwell proposes at once to adop with a view to mitigating the grievance.

I have, &c.,
(Signed) T. T. PEARS, Major-General,
Military Secretary.

No. 32.

The Secretary of State for War to His Royal Highness the Field-Marshal Commanding-in-Chief.

20, Gen. No., 821.

War Office,
17th April, 1869.

Sir,

I HAVE the honour to acknowledge the receipt of your Royal Highness's letter of the 10th instant, on the subject of the supersession of Officers of the British Establishment by Officers of the Indian Establishment, and to state in reply that I am in communication with the Secretary of State for India in Council, with a view to the relief of the British Officers so far as may be possible, from the injury of which they complain.

I have, &c.,
(Signed) EDWARD CARDWELL.

No. 33.

Lieutenant-General Sir E. Lugard, G.C.B., to the Military Secretary, India Office.

Gen. No., 824.

War Office,
20th April, 1869.

Sir,

I AM directed by Mr. Secretary Cardwell to acknowledge the receipt of your letter of the 16th instant, on the subject of the supersession of Colonels of the British Establishment by Colonels on the Indian List; and to transmit to you, for submission to the Secretary of State for India in Council, a copy of the Report of the Committee appointed in July last to consider the question of the supersession complained of.*

I have, &c.,
(Signed) EDWARD LUGARD.

No. 34.

Major-General T. T. Pears, C.B., to the Under Secretary of State for War.

No. 2575 $\frac{492}{W}$.

India Office, S.W.,
18th May, 1869.

Sir,

1. I AM directed by the Secretary of State for India in Council to acknowledge the

* See Parliamentary Paper No. 283, of Session 1869.

receipt of your letters of the 9th and 20th ultimo, upon the question of the supersession of British Colonels by those of the Indian Army, and forwarding a copy of the Report of the Committee appointed to enquire into the subject.

2. It appears that the Secretary of State for War recognizes, as regards the Officers who have attained the rank of Major-General, the concession proposed by him, and concurred in by the Duke of Argyll, in my communication of the 16th ultimo, as an act of complete justice to the Officers of the British Establishment, but that as regards the time during which a superseded Officer continues in the rank of Colonel, the grievance still remains unredressed, and that this is the more important portion of the case; and further, with reference, it is assumed, to the recommendation of the Committee upon the question, that an immediate addition of 45 be made to the number of Major-Generals on the British Establishment, as a partial amelioration of the present condition of the Colonels of that Service, that Mr. Cardwell feels it will be of little use to apply to the Lords of Her Majesty's Treasury to sanction any expense for the relief of those Colonels; but appeals to the Secretary of State for India in Council to assist in adopting such arrangements as may remove from the Colonels the sense of injustice under which they at present labor, and that with this view he would propose for their consideration and concurrence that the provisions of the Royal Warrant of 15th June, 1864, may be reconsidered, unless any other way occurs to the Duke of Argyll of remedying the grievance complained of.

Par. 39 of the Report.

3. In reply, I am instructed to observe, with reference to the assumption that the supersession in question is due to the operation of the provisions of the Warrant of June 1864, that such is the case only in a very partial degree, as it appears from the Report of the before-named Committee that the promotion of the Indian Colonels has been accelerated mainly by the operation of the Royal Warrant of 1854, and by the Amalgamation of the Forces in 1860-61; particularly by the special annuities offered in the latter year by the Secretary of State for India, of which many of the Senior Officers of the Indian Armies availed themselves, while the comprehensive system of retiring full-pay pensions in force in the Indian Service, which has yearly relieved the Indian List of many of the Senior Officers, and thus cleared the way for the succession of their juniors to the rank of General Officer further tends to give that Service an advantage in this respect.

Pars. 12 & 14.

4. Moreover, as likewise pointed out by the Committee, the disadvantage at which the Colonels of the British Service are placed would appear to be due, in a great degree, to the establishment of General Officers for that force having to provide for the Officers upon the half-pay list, as well as those upon full pay.

Par. 51.

5. Under these circumstances I am instructed to state that the Duke of Argyll can perceive no sufficient reason for altering the Warrant of June 1864, or for any interference with the system which has ben deliberately established for regulating the promotion of the Officers of the Indian Army.

6. I am to observe, however, that the supersession by Indian of British Colonels, now complained of, is an evil of a temporary character, and one particularly bearing upon those Officers only of Her Majesty's British Army who are serving in India, it having been already agreed, as stated in paragraph 70 of the despatch of the Secretary of State to the Government of India, No. 194, dated 17th June, 1864, and which despatch forwarded the Warrant in question, that special measures would be adopted, when necessary, for meeting any similar inconvenience during service out of India.

7. With respect to the Officers serving in India, therefore, the only remedy that occurs to the Duke of Argyll will be found in the adoption of a course similar in principle to that which was, with the same object, introduced in India in 1837, and continued in force for some years in that country, viz., the promotion to the local rank of Major-General of those Colonels of Her Majesty's British Army serving in India, who are senior as such to Colonels of Her Majesty's Indian Army who may from time to time be promoted to the rank of Major-General.

8. In accordance with the practice observed under similar circumstances in 1837, the British Officers so promoted may be considered eligible to reside in India so long as their Regiments remain upon the Indian Establishment and their names are borne upon the Regimental List; also to hold those brigade commands which they would have held had their Promotion not taken place.

I have, &c.,

(Signed) T. T. PEARS, Major-General,
Military Secretary.

No. 35.

Lieutenant-General Sir E. Lugard, G.C.B., to the Military Secretary, Horse Guards.

20, Gen. No., 836.

War Office,
1st June, 1869.

Sir,

WITH reference to Mr. Secretary Cardwell's letter of 17th April, 1869, addressed to the Field-Marshal Commanding-in-Chief, on the subject of the supersession of Officers of the British Service by Officers of the Indian Army, I am directed to transmit to you, for submission to His Royal Highness, the enclosed copy of a letter from the India Office, and to call attention to the last two paragraphs thereof containing the measures proposed by the Duke of Argyll for remedying the grievance complained of as regards the Colonels serving in India. 8 May, 1869. No. 2575 $\frac{492}{W}$.

I have, &c.,
(Signed) EDWARD LUGARD.

No. 36.

Lieutenant-General Sir E. Lugard, G.C.B., to the Under Secretary of State for India.

20, Gen. No., 836.

War Office,
7th June, 1869.

Sir,

HAVING laid before the Secretary of State for War your letter of the 18th ultimo, 2575 $\frac{492}{W}$, upon the subject of the supersession of British Colonels by those of the Indian Army, I am instructed to acquaint you, for the information of the Secretary of State for India in Council, that after full consideration of the measures proposed by the Duke of Argyll, it does not appear to Mr. Cardwell that they will adequately meet the grievances of which the Colonels on the British establishment now complain, and he trusts therefore that the subject may receive His Grace's reconsideration.

I have, &c.,
(Signed) EDWARD LUGARD.

No. 37.

Major-General T. T. Pears, C.B., to the Under Secretary of State for War.

No. 2924 $\frac{564}{W}$.

India Office,
9th June, 1869.

Sir,

I AM directed by the Secretary of State for India in Council to acknowledge the receipt, of your letter of the 7th instant, in which it is stated, with reference to my letter No. 2575 $\frac{490}{W}$, of the 18th ultimo, that after a full consideration of the measures proposed by the Duke of Argyll, it does not appear to Mr. Cardwell that they will adequately meet the grievances of which the Colonels on the British Establishment now complain, and he trusts therefore that the subject may receive His Grace's reconsideration. Query No. 2575 $\frac{492}{W}$

2. In reply, I am directed to point out that the measures which have been proposed with a view to remedying, as far as possible, the supersession complained of are those suggested by the late Committee in the 42nd and three following paragraphs of their Report, 3rd January last. The third measure proposed by the same Committee, that of making an immediate addition of 45 Major-Generals to the Imperial List has, it is understood, been objected to by Mr. Cardwell on account of the expense. Query 5th Jan., 1869.

3. The Duke of Argyll can only further suggest, that in the event of the Secretary of State for War sanctioning the course proposed in my letter of the 18th ultimo, that is, reverting to the system in force in India from 1837 to 1854, and extending to the grade of Major-General the principle of conferring local rank in India, now applicable only to the lower grades, the authorities in India might be instructed to adopt such measures, either in the distribution of their divisional commands, or in the relief and disposition of regiments, as should obviate the inconvenience and embarrassment that might arise from local Major-Generals commanding British regiments being placed under Divisional Commanders of the Indian Service junior to them as Colonels.

4. With these additional precautions the Duke of Argyll would hope that the measures already proposed would be sufficient to meet, in a very great degree, that which is after all but a temporary embarrassment, and would satisfy the not unreasonable complaints of the senior Colonels of Her Majesty's British Service.

5. At the same time I am to observe, that so long as separate lists of General Officers exist, inequalities in their several rates of promotion will be, as they ever have been, inevitable and complaints of supersession will assuredly arise from one or the other.

6. The unprecedented extent of the inequality in the present case, due mainly to the number of Colonels who retired from the Indian Army in 1861, has doubtless given occasion for an unusual display of feeling on the subject: but this circumstance does not, unfortunately, render the application of a complete remedy less difficult than it would have been, had the superior run of promotion shown itself in a less marked degree, or on the other side, a consideration of the prospective operation of the Warrant of 15th June, 1864, will show that the present rate of promotion among the Colonels of the Indian Army will receive a great and permanent check in about three years hence, when the four last clauses of that Warrant will come into operation, the first 50 Colonels (39 being Staff Corps Officers), who will then stand at the head of the Indian List for promotion, all ranking as Colonel from one and the same day.

7. In conclusion, I am instructed to request the attention of Mr. Cardwell to the accompanying copy of a letter from Lord Hill to the India Board, dated 7th May, 1840, upon the subject of the practice then in force of conferring the local rank of Major-General on Officers of Her Majesty's British Forces serving in India.

8. The Duke of Argyll would hope that the course which was adopted at that time, with a view to meeting a precisely similar inconvenience to that now complained of, and which continued in operation for several years, will be found equally efficacious in removing the complaints arising from the present inequality in the rate of promotion in the two lists of Colonels.

I have, &c.,
(Signed) T. T. PEARS, *Major-General*,
Military Secretary.

[Enclosure in No. 37.]

Horse Guards,
7th May, 1840.

Sir,

HAVING stated in my letter of the 11th ultimo that, although the printed paper therein transmitted has been received only through a private channel, yet that as no misapprehension may hereafter arise in regard to the subject of it, Lord Hill was desirous that the earliest opportunity should be taken to call the attention of the Court of Directors to the matter. I have now the honour to enclose the copy of a despatch from the Commander-in-Chief in India, containing his official notification of that General Order issued by the Supreme Government of India, by which rules are laid down for the future employment of local Major-Generals of Her Majesty's Army, and for the payment of Officers of that rank, when no eligible command can be found for them, and as there are two principal points in which these Regulations appear to Lord Hill to bear with unusual hardship upon Her Majesty's Officers, and which His Lordship is satisfied the Court of Directors will at once see are wholly at variance with the construction which he had put upon your letter, dated 14th September, I have His Lordship's commands to request that the attention of the Court of Directors may be especially called to them, as it should seem from the enclosed letter of Sir Jasper Nicolls, the authorities in India have taken a different view of the matter under discussion.

In the copy of a despatch from the Court of Directors to the Governor-General, dated 11th September, it is stated: "1st. We forward to you the copy of a letter from Lieutenant-General Lord "Fitzroy Somerset, dated 5th instant, and of its enclosures, bringing to our notice that the arrange-"ments agreed upon and authorized for the promotion and employment of Her Majesty's Lieutenant-"Colonels serving in India, who are senior as such to our Officers promoted to be Colonels and "Major-Generals, have not been correctly understood.

"It will be apparent on referring to our letters of the dates noted in the margin,* that those "Officers of Her Majesty's Service, who have been promoted to be local Major-Generals, are "eligible to be appointed to Brigade Commands in divisions, whether their regiments may be serving "in those divisions or not, provided always that no interference be permitted with the commands on "the General Staff allotted to the Major-Generals, or Brigadier-Generals and Brigadiers of the "Queen's and the Company's Forces respectively."

"2nd. In our letter of the 28th January, 1835, we stated that, if it shall be found impracticable "to make either of the arrangements then suggested for the employment of Officers of Her Majesty's "Service, who might be senior in a division to an Officer appointed to the command of that "division, it would be indispensably necessary that the Officers so situated should be called upon to

* 28th January, 1835, Pars. 1 & 9; 19th December, 1837, Par. 8.

"consider of the course they would have to take, and they must have the option of retiring from "the country, as they would do, if promoted to be Major-Generals on a General Brevet, and not "appointed to serve on the Staff.

"We have now to apprise you that local Major-Generals so situated may continue to reside in "India unemployed, like Major-Generals in our service, receiving the pay and batta of their regimental "rank, but with the understanding that the Brigade Commands, usually allotted to the Queen's "service, shall be given to the Queen's Officers available for them at each Presidency according to "seniority."

The intentions of the Court of Directors are so distinctly expressed in the foregoing paragraphs, especially in the second, wherein the employment of Officers of Her Majesty's service, who might be senior in a division, is alluded to and provided against, that it is to be regretted any deviation has been made from them in India, and the more so as the explanation contained in the letter from Sir Jasper Nicolls does not, in Lord Hill's opinion, contain any sufficient reason for such departure from the strict letter of those instructions.

In any comparison drawn between the condition of the local Major-Generals of the Queen's Army and the Major-Generals of the Company's Army in India, it must not be lost sight of that the former hold their rank only during their temporary service in India, while the rank of the latter is permanent, and that the period of service of the Queen's local Major-Generals in India depends altogether upon the regiments to which they respectively belong remaining in that country, and not in any manner upon themselves, and consequently to limit the duration of their Staff Command in the manner stated in the General Order, must press with undue severity upon the individual Officers so employed.

With a view of showing the precise points of difference more distinctly, the General Order issued in India is here placed in juxtaposition with the observations which Lord Hill is anxious should be brought before the Court of Directors for their attentive consideration.

General Order.	*Remarks of Lord Hill.*
1st. That local Major-Generals of Her Majesty's Service are eligible under the appointment of Government for employment as Brigadiers where Queen's troops are stationed, provided that such appointment will not interfere with the commands on the General Staff allotted to Company's Officers.	1st. This paragraph appears to be in conformity with the despatch of the Court of Directors.
2nd. That the senior local Major-Generals (of the regiments at each Presidency) are in preference to be so employed.	2nd. As also this.
3rd. That the Brigadiers' term of serving shall be limited, as in the case of Major-Generals, to five years, and half the number of years which any Officer may have served prior to the promulgation of this order in command of a brigade, including any temporary command of a division, shall be deducted from that term.	3rd. The remarks upon this will be included in those made upon paragraphs 5 and 6, which contain the main objections now under discussion.
4th. That local Major-Generals of Her Majesty's service who prefer remaining in India, in expectation of succeeding by seniority to Brigade Command, may do so, selecting their residences within the Presidencies in which their regiments are serving, and receiving the pay and full batta of their regimental rank.	4th. This resolves itself also under the paragraph 6, the observations upon which explain the case to which this regulation is applicable.
5th. That local Major-Generals of Her Majesty's service must hereafter be held to be ineligible to retain the command of their respective regiments, and must vacate their Brigade Commands on the departure of their regiments from India, or from one Presidency to another.	5th. This paragraph appears to differ most essentially from the despatch of the Court of Directors, as is fully explained in the remarks upon paragraph 6.
6th. That local Major-Generals of Her Majesty's Service, who have served five years as Brigadiers, are not without special sanction to remain in India in receipt of full batta, although the regiments to which they belong may still continue on the Indian Establishment.	6th. The effect of this paragraph combined with 3, 4, and 5, must be to set aside a Lieutenant-Colonel in the Queen's Army holding the local rank of Major-General, and to preclude him altogether under the circumstances stated from any military employment whatever, and appears to Lord Hill to be wholly at variance with the despatch of the Court of Directors. It is admitted that a local Major-General must quit whatever command he may have in India when his regiment returns to Europe, or is removed from one Presidency to another, as stated in paragraph 5, and also that he can only be appointed to such Brigade Commands as his seniority may permit, according to the full intent and meaning
7th. That these rules shall have effect from the date of this General Order.	

of the Court of Directors' instructions, but it is the opinion of Lord Hill that, when no such separate command shall be entrusted to him, he must in such case, as of necessity, resume his place with his regiment.

The only exception that can justly be admitted to this regulation must arise from the circumstance of his local rank interfering with the rank of a Company's Officer commanding on the Staff of the brigade or division in which his regiment may be serving, in which event it will be at the option of the Queen's Officer to continue to serve with his regiment under such company's Officer, or to select his residence within the Presidency in which his regiment is serving and receiving the full pay and batta of his regimental rank, as distinctly stated in paragraph 4.

That the Court of Directors may have more clearly before them the injurious effects which have already resulted to the interest of the Queen's Officers from this deviation from the obvious meaning of their despatch, it is only necessary to state what, while no Officer of the Queen's Service complains of having been displaced to make room for seniors, who have arrived in the country at different periods subsequently to his appointment to command, it is considered and felt as a very great hardship, that a local Major-General, a Lieutenant-Colonel in the Queen's Army, should be cut off from falling back on his own Regiment, and declared to be ineligible to exercise the command of it when he was actually the junior Major-General, either of the Queen's or Company's Service, so that his returning and doing duty with his Corps could not by any possibility have interfered with any of the Company's Officers, while it operated so injuriously to the individual as the senior Lieutenant-Colonel of a Regiment, as in addition to the extreme mortification of such exclusion, his proper emoluments were reduced to little more than one half.

In every point of view therefore which Lord Hill can take of this matter, it appears to his lordship but a fair measure of justice to all parties interested that the question should be at once put to rest, and that this can best be done by a special direction to the proper authority in India, to adhere to the instructions contained in the despatch from the Court of Directors, and which Lord Hill had considered to be a satisfactory and final adjustment of the differences upon this important subject.

I have, &c.,
(Signed) FITZROY SOMERSET.

W. Clay, Esq., M.P.,
&c., &c., &c.

No. 38.

Major-General the Right Hon. Sir H. K. Storks, G.C.B., G.C.M.G., to the Military Secretary, Horse Guards.

20, Gen. No., 839.

War Office,
12th June, 1869.

Sir,

WITH further reference to the correspondence on the question of the supersession of British Colonels by those of the Indian Army, I am directed by the Secretary of State for War to transmit to you the accompanying copy of a letter from the India Office, with its enclosure, and to request that you will move the Field-Marshal Commanding-in-Chief to favour Mr. Cardwell with an early expression of His Royal Highness's opinion on the probable effect of the proposal contained in these communications.

Dated 9th June, 1869, see No. 37 and enclosure.

I have, &c.,
(Signed) H. K. STORKS.

P.S.—The return of the enclosure, dated 7th May, 1840, is requested.

No. 39.

Lieut.-General W. F. Forster, K.H., to the Under Secretary of State for War.

Horse Guards,
17th June, 1869.

Sir,

I AM directed by the Field-Marshal Commanding-in-Chief to acknowledge the receipt of

your letters of the 1st and 12th instant respectively, and their enclosures, regarding the question of the supersession of Colonels of the British Army by those of the Indian Service, and in reply, to offer the following remarks for the consideration of the Secretary of State for War.

The Duke of Cambridge understands from the correspondence which has passed on the subject, between Mr. Secretary Cardwell and the Secretary of State for India in Council, that it is proposed, in order to mitigate as far as possible the grievous supersession under which the Officers of the British Army are suffering; first, that the dates of the commissions of all the present Major-Generals of the British Army, whose Colonelcies bear date on or after the 28th November, 1854, should be so altered as to place them in the same relative position with the General Officers of the Indian Army as they held with such Officers in the rank of Colonel, and that a similar rule should be adopted in the case of Colonels of the British Army hereafter promoted to the superior grade. Second, that on the promotion to the rank of Major-General of a Colonel of Her Majesty's Indian Army, who may be junior as Colonel to any Colonel of the British Army actually serving in India, the latter should have the local rank of Major-General, with corresponding date. Such British Officers being considered eligible to serve in India so long as their Regiments remain upon the Indian Establishment, and their names are borne upon the Regimental List.

After a full consideration of the probable effect of these proposals, His Royal Highness is of opinion that they do not adequately meet the supersession complained of, though locally in India the effect of the second proposal would mitigate it to some extent.

His Royal Highness desires me to point out that the circumstances under which, in 1837, the system of the so-called "Fane" Brevets was introduced, differ very materially from those of the present day, and however completely that system adapted itself at that time, it would fail to do so now.

In 1837, and in 1840, when Lord Hill wrote on the subject, the rank of the Officers of the Indian Army held good only in India and east of the Cape of Good Hope, whereas, now such rank is permanent, and extends to every portion of the globe. Consequently, supersession which was formerly only a local and temporary evil, has now become a permanent grievance and injustice. Further, the number of Regiments and Officers of the British Army, serving in India at the present time, is greatly in excess of what it was in former years, and the inconvenience and embarrassments arising out of the system of local Major-Generals would be proportionately greater.

On looking into the number of Regimental Officers of the British Army who would be promoted to be local Major-Generals, it is found that the supersession of Colonels of the British Army has extended in so unprecedented a manner that it would be impossible to make such arrangements as would provide against the majority of them being compelled, either to serve under their juniors of the Indian Service, or to lead idle lives away from their Regiments, on leave in India, or in this country. It would be with the greatest reluctance therefore that the Field-Marshal Commanding-in-Chief would concur in a measure which would involve such anomalous and, in his opinion, highly objectionable consequences.

His Royal Highness is aware that he lately gave his support to the recommendations of the Committe presided over by Colonel Egerton, of which the introduction of the "Fane" system, in a modified degree was one; but His Royal Highness had not then estimated the full extent of the measure, and feels that he could now only concur in it as a last resort.

Further, as regards the first of these proposals, the Duke of Cambridge has ascertained that the complete rectification of the dates of the commissions of all the Major-Generals whose Colonelcies bear date on or after the 28th November, 1854, could not be carried into effect without compromising the interests of the Officers of the Ordnance Corps, the position of several of whom, in relation to each other, and to General Officers of the Line, would be seriously affected.

His Royal Highness would propose, therefore, that the rectification of dates of Commission should apply only to such Officers as have been or may be promoted to be Major-Generals on or after the 6th March, 186-, the date on which the 6th clause of the Warrant of June, 1864, came into effect. Thus all those Major-Generals of the British Army who have been promoted since that date would be antedated to the 6th March, 1868; and all Colonels of the British List who may hereafter be promoted, until the period contemplated in the 10th clause of the Warrant arrives, would receive such dates to their Commissions as Major-Generals as will place them in their proper position relatively with the Indian Officers, according to their dates as Colonels.

The Duke of Cambridge again reverts to the proposal of the Committee that, as a partial amelioration of the present condition of the Colonels of the British Service, an immediate addition of 45 to the number of Major-Generals on the Establishment may be made, and

having regard to all the circumstances which gave rise to the question of supersession, His Royal Highness trusts that the proposal may yet receive favourable consideration.

It has been pointed out by Colonel Egerton's Committee, and admitted by the Secretary of State for India in Council, in the third paragraph of Major-General Pears' letter of the 18th May, that the promotion of the Indian Colonels has been accelerated by several exceptional causes, viz., by the operation of the Royal Warrant of 1854, which, in placing the Indian on the same footing as the British Army, gave the former a very largely increased Establishment of General Officers, by the amalgamation of the Forces in 1860 and 1861, and particularly by the special annuities offered in the latter year by the Secretary of State for India, of which many of the senior Officers of the Indian Armies availed themselves; and further, that the comprehensive system of retiring full-pay pension, in force in the Indian Service, has yearly relieved the Indian List of many of the senior Officers, and thus cleared a way for the succession of their juniors to the rank of General Officer.

Thus it will be seen that, from 1854 to the present day, the Indian Army has benefited by special measures, in the advantages of which the British Army have not participated, and whilst the interests of the former have been maintained by special legislation, that very legislation has had in its results a most material and disadvantageous influence on the prospects and interests of the British Service.

It should not be overlooked that by the cancelment of the Warrant of 1st January, 1862, and the substitution for it of that of 1864, the Officers of the British Army have actually been deprived of the promotion and prospects which the former Warrant held out to them, and that, had it still been in force, no less than 24 Colonels of the British Army would now be Major-Generals, instead of an equal number of Indian Officers who have been promoted to that rank since 6th March, 1868.

Looking to all these circumstances, and to the fact that the measures which it has been considered expedient to adopt in favour of the Indian Army, and which the Field-Marshal Commanding-in-Chief feels cannot now be undone, have necessarily had an inverse and prejudicial effect on the interests of the British Army, His Royal Highness cannot think it unreasonable to ask that the Indian Government be invited to aid in a measure partially restoring the relative position of the two Services, and His Royal Highness earnestly trusts, that recognizing the fact, that the disadvantages under which the Officers of the British Army are labouring, are mainly due to the exceptional advantages which have been conferred on the Indian Army, the Secretary of State for India in Council will feel that the temporary additional expense, which would be caused by the immediate promotion of 45 Colonels to be Major-Generals may justly and legitimately be charged to the revenues of India.

I have, &c.,
(Signed) W. F. FORSTER.

P. S.—The Horse Guards' letter, dated 7th May, 1840, is herewith returned as requested.

No. 40.

Major-General the Right Hon. Sir H. K. Storks, G.C.B., G.C.M.G., to the Military Secretary, India Office.

20, Gen. No., 844.

War Office,
5th July, 1869.

Sir,

I AM directed by Mr. Secretary Cardwell to transmit to you, for submission to the Secretary of State for India in Council, the enclosed copy of a letter from the Horse Guards, dated 17th ultimo, containing the views of His Royal Highness the Field-Marshal Commanding-in-Chief, on the question of the supersession of Colonels of the British Army by Colonels of the late Indian Army.

I have &c.
(Signed) H. K. STORKS.

No. 41.

Major-General T. T. Pears, C.B., to the Under Secretary of State for War.

No. 3355 647/W.

India Office, S.W.
6th July, 1869.

Sir,

1. I am directed by the Secretary of State for India in Council, to acknowledge the receipt of Sir H. Storks' letter of the 5th instant, transmitting copy of a letter from the Horse

Guards, dated 17th June, containing the views of His Royal Highness the Field-Marshal Commanding-in-Chief, on the question of the supersession of Colonels of the British Army by Colonels of the late Indian Army.

2. From this letter the Duke of Argyll regrets to learn, that after full consideration of the probable effect of the proposals referred to in my letter of the 9th ultimo, His Royal Highness is of opinion that they do not adequately meet the supersession complained of, though locally in India the effect of the second proposal would mitigate it to some extent.

3. His Royal Highness however observes, with reference to this point, that the circumstances under which, in 1837, the system of the so-called "Fane" Brevets was introduced, differ very materially from those of the present day; that in 1837 and 1840, when Lord Hill wrote on the subject, the rank of the Officers of the Indian Army held good only in India and east of the Cape of Good Hope, whereas, now, such rank is permanent, and extends to every portion of the globe; consequently, supersession which was formerly only a local and temporary evil, has now become a permanent grievance and injustice; that the number of regiments and Officers of the British Army serving in India at the present time, is greatly in excess of what it was in former years, and the inconvenience and embarrassment arising out of the system of local Major-Generals would be proportionably greater. His Royal Highness also expresses great reluctance to the adoption of a measure which would involve, in his opinion, anomalous and highly objectionable consequences.

4. Further, as regards the first of these proposals, His Royal Highness has ascertained, that the complete rectification of the dates of the Commissions of all the Major-Generals, whose Colonelcies bear date on or after the 28th November, 1854, could not be carried into effect without compromising the interests of the Officers of the Ordnance Corps; the position of several of whom, in relation to each other, and to General Officers of the Line, would be seriously affected.

5. His Royal Highness proposes, therefore, that the rectification of dates of Commissions should apply only to such officers as have been, or may be promoted to be Major-Generals, on or after the 6th March, 1868, the date on which the 6th Clause of the Warrant of June 1864, came into effect.

6. Adverting to the report of the Committee lately assembled for the consideration of the question, his Royal Highness urges the immediate addition of 45 to the number of Major-Generals on the Establishment, and suggests, for certain reasons given, that the cost of such addition might without impropriety be charged to Indian Revenues.

7. The Duke of Argyll has instructed me to state with reference to the above, that he has no objection to offer to the substition of the 6th March, 1868, as the date from which the rectification of the date of rank of the Major-Generals in the two services shall be made, in lieu of the 28th November, 1854, as first proposed.

8. With regard to the objection offered by His Royal Highness to the adoption as a temporary arrangement, of the system known as the "Fane" Major-General system, and which was proposed by the Commander-in-Chief in India, and sanctioned by Lord Hill in 1837, with a view to meeting a similar difficulty, I am to observe, that, considered with the first measure proposed on this occasion, *i. e.*, the rectification of dates of rank of the Major-Generals themselves, and the circumstances of the present time, the embarrassment to be apprehended from the adoption of such a system is likely to be of a much more temporary character now than then.

9. Under present circumstances the two independent lines of promotion will to all practical purposes soon cease to exist, and although it is quite true that at present there are a larger number of British regiments serving in India than then, on the other hand, there are fewer active Commands to which the Officers, whose rapid advance to the grade of Major-General is complained of, are eligible for appointment (and to these, Officers of the old Indian, now Royal Artillery and Engineers, are eligible), and less chance therefore of a Colonel of Her Majesty's British Service being brought into a position, subordinate to a Major-General of the Indian Establishment, junior to himself as Colonel.

10. The Duke of Argyll is not at all disposed to under-estimate the importance of the subject to the Officers of Her Majesty's Service more immediately concerned in the question, but he wishes to point out to Mr. Cardwell the peculiar circumstances under which the difficulty has arisen, and its temporary character, with a view of showing the impediments that offer themselves to a complete remedy, and the inexpediency of adopting any grave measure likely to be attended with permanent effects or serious expenditure of public money, in order to meet an embarrassment which will disappear under present regulations in the course of few years.

11. It appears that Her Majesty's Government having determined in 1861 upon the amalgamation of the two services,—the British and Indian,—one of the first measures to be

considered was that of bringing the Officers of the two Services on to one list for general Army promotion.

12. It was solely with this view that the Royal Warrant of the 1st January, 1862, was framed, according to the terms of which all Colonels of either Army, who attained that rank prior to the 17th February, 1861, should be continued on separate lists as before, while all Officers of either Army, who should have attained that rank on or after the 17th February, 1861, were to be placed at once, according to the dates of their Commissions as Colonels, on one general list, from which, so soon as the separate lists of Colonels were exhausted, promotion should be made according to seniority in succession to all vacancies in the establishments of General Officers, whether of the British or the Indian Service. It will be in the recollection of Mr. Cardwell that great objection was raised by the Officers of the Indian Army to this, and to certain other measures connected with the amalgamation, as being opposed to the spirit of the Parliamentary Guarantee contained in the 56th Clause of the Act 21 and 22 Vic., cap. 106, and that in consequence of the action taken by the House of Commons, a Royal Commission was appointed under the presidency of Lord Cranworth to consider and report upon these complaints.

13. The opinion of the Commission upon this particular question will be found in the 76th and four following paragraphs of their Report of the 9th November, 1863, in which they contrast the absolute chance of promotion enjoyed by the Indian Colonels before and after the amalgamation, but with no reference to the relative chances of the two services, and inasmuch as they would have to be losers by the measure, they felt bound to express their opinion that "in this respect the "parliamentary assurance had not been fulfilled."

14. The consequence of this Report was that a revised Warrant was published, dated the 15th June, 1864, being framed on the principle of reserving to all Indian Officers, who had not elected to join the Staff Corps, the privilege of rising to the higher ranks of the Army on the former system, and giving to all Officers of the Staff Corps, who had already, before the amalgamation, attained to the rank of Lieutenant-Colonel (thus rendering their advance to that of Colonel secure in a given time), the privilege of rising on the Indian list, until at a certain prospective date they should be transferred to the amalgamated list.

15. It has already been pointed out that a measure not connected with the amalgamation of the Armies, but arising out of the necessity of reducing the number of effective Officers of the Indian Army, viz., that of offering in 1861 special retiring pensions to a limited number of the Senior Officers, has tended greatly to accelerate the promotion of Indian Officers to the rank of Major-General, and has been the main cause of the supersession now complained of; and Mr. Cardwell will observe that while the revision of the Warrant of January 1862 was inevitable, the adoption of that of 1864 has had very little to do with the rapid promotion among the Indian Colonels, and that the same complaint would have arisen had neither the one Warrant nor the other been published, and the two services remained as before the amalgamation, an important difference being that as matters now stand the evil is temporary, whereas then it would have been long continued.

16. There are thirty-one Colonels of the Indian Service remaining to be promoted on the separate list. The thirty-second on the list has already, with all Staff Corps Colonels below him, been placed on the General List of the British Army, and will be promoted on that list according to the date of his Colonel's Commission.

17. It may be reasonably expected that this event will occur in about three years from the present time, and thenceforward under the 10th Clause of the Warrant of 1864, the list of Indian Major-Generals will be steadily reduced as vacancies occur, and the British List will be augmented, Officers of the British Service, in the first instance, deriving the whole benefit from such augmentation.

18. It would thus appear that the very large number of Officers superseded, composed as it is to a great extent of Officers retired on full or half pay,* and of those of the Ordnance Corps who rise to the higher ranks on separate lists, will ere long begin to decrease and continue to do so until the two services are completely amalgamated, and no such thing as supersession among Colonels will be any longer possible.

19. I am to observe also that the establishment of General Officers on the Indian List has recently been reduced from 220 to 173.

20. Adverting to the proposal already made, it appears to the Duke of Argyll that the

* Artillery	38
Engineers	20
Marines	1
Half-pay unattached, or Retired Full-pay	152
Full-pay	63
Total	274

first would only require to be slightly amended to meet the views now expressed by His Royal Highness the Field-Marshal Commanding-in-Chief, and will stand thus, the second proposal being expressed so as to apply to both services in all parts of the world.

1. That from and after a date to be fixed the commissions of Major-Generals of the British Establishment shall be antedated so that the Major-Generals of the British and Indian services shall stand in the order of the dates of their respective commissions as Colonel.

2. That when British and Indian Officers, the senior being of the rank of Colonel, and the junior in rank as Colonel having become a Major-General, shall serve in India or meet elsewhere upon service, the local rank of Major-General shall be given to the Officer whose commission as Colonel is of the earliest date. But this position shall not prevent the employment in special cases of junior Officers in whatever position may be most advisable for the public service; and further,—

3. That every endeavour will be made by the authorities in India in the distribution of the divisional commands, and in the relief and disposition of regiments, to obviate, as far as possible, the inconvenience that might arise from a local Major-General commanding a British regiment being placed under a Divisional Commander of the Indian Service junior to him as Colonel.

21. The Duke of Argyll cannot but think that the above measure should suffice to meet all reasonable grounds of complaint, and that whatever anomaly, whatever departure from strict military usage their application may involve, the endurance of such evils for a short definite time would be preferable to the adoption, with a view of meeting a temporary embarrassment, of any measure that might revive questions connected with the armies, which have been set at rest with so much difficulty, and the result of re-opening which it is impossible to foresee.

22. I am only further instructed to add that the Duke of Argyll has very carefully considered the suggestion of His Royal Highness the Field-Marshal Commanding-in-Chief that, as a further remedy in the present case, an addition of 45 General Officers should be made to the British List at the expense of the Indian Government, and that his Grace cannot admit to the extent proposed by His Royal Highness the responsibility of the Government of India for measures carried out under the authority of Her Majesty's Government and with the sanction of Parliament, nor can he consider it fair that the people of India should be called upon to bear the expense of rectifying the position of a certain number of Colonels of the British Army in the manner proposed.

I have, &c.,
(Signed) T. T. PEARS, Major-General,
Military Secretary.

No. 42.

Major-General the Right Hon. Sir H. K. Storks, G.C.B., G.C.M.G., to the Military Secretary, India Office.

20, Gen. No., 845.

War Office,
20th July, 1869.

Sir,

IN acknowledging the receipt of your letter of the 6th instant, No. 3355 647/W., relating to the supersession of Colonels of the British Army by Colonels of the late Indian Army, I am directed by Mr. Secretary Cardwell to request you will state to the Secretary of State for India in Council that, considering all the complicated questions which arise in connection with this subject, and especially the Sections in the Acts of 1858 and 1860, guaranteeing certain rights to the Officers of the Indian Establishment, and the portion of the Report of Lord Cranworth's Commission, bearing upon the Warrant of 1862, it appears to Mr. Cardwell that the most desirable course will be to submit the question of supersession under the Warrant of 1864 to a new Committee, to be composed of one eminent lawyer, and of Officers of the two Services respectively, and of too high rank to be themselves personally interested.

Mr. Cardwell could not consent to refer to this Committee any proposals involving an increased charge upon the Estimates of this Department; but should propose to confine the reference to asking for their opinion upon the proper relative position of the Officers of the two Services.

I have &c.,
(Signed) H. K. STORKS.

No. 43.

Major-General T. T. Pears, C.B., to the Under Secretary of State for War.

No. 3617 $\frac{692}{W}$.

India Office, S.W.,
21st July, 1869.

Sir,

I am directed by the Secretary of State for India in Council to acknowledge the receipt of your letter of the 20th instant, in which it is stated, that considering all the complicated questions which arise in connection with the subject of the supersession of Colonels of the British Army by Colonels of the late Indian Army, and especially the sections in the Acts of 1858 and 1860, guaranteeing certain rights to the Officers of the Indian Establishment, and the portion of the report of Lord Cranworth's Commission bearing upon the Warrant of 1862, it appears to Mr. Cardwell that the most desirable course will be to submit the question of supersession under the Warrant of 1864 to a new Committee, to be composed of one eminent lawyer, and of officers of the two services respectively, and of too high rank to be themselves personally interested.

2. In reply, I am to request you will inform Mr. Cardwell that the Duke of Argyll consents to the appointment of a Committee as proposed, upon the understanding that no suggestion can be entertained involving a charge upon Indian revenues.

3. At the same time I am instructed to request that a draft of the instructions, which it is proposed to furnish to the Committee, may be forwarded for His Grace's consideration, and that the attention of the Committee may be called, in those instructions, to the necessity of bearing in mind the Acts of 1858 and 1860, referred to in your letter under acknowledgment.

I have, &c.,
(Signed) T. T. Pears, Major-General,
Military Secretary.

No. 44.

Major-General the Right Hon. Sir H. K. Storks, G.C.B., G.C.M.G., to the Military Secretary, Horse Guards.

20, Gen. No., 848.

War Office,
29th July, 1869.

Sir,

Adverting to previous correspondence relative to the supersession of Indian Officers, I am directed to acquaint you, for the information of His Royal Highness the Field-Marshal Commanding-in-Chief, that, with the concurrence of the Secretary of State for India, Mr. Secretary Cardwell proposes to refer the question to a new Committee composed of Vice-Chancellor Sir William Melbourne James, General Sir Charles Yorke, G.C.B., and an Officer to be nominated by the Duke of Argyll. Enclosed are the suggested Instructions for the Committee, to which Mr. Cardwell has invited the concurrence of the Duke of Argyll, and to which he trusts His Royal Highness will not entertain any objection.

See next page.

I have, &c.,
(Signed) H. K. Storks.

No. 45.

Major-General the Right Hon. Sir H. K. Storks, G.C.B., G.C.M.G., to the Under Secretary of State for India.

20, Gen. No., 848.

War Office,
29th July, 1869.

Sir,

With reference to your letter of the 21st instant, 3617 $\frac{692}{W}$, expressing the concurrence of the Duke of Argyll, in Mr. Secretary Cardwell's proposal to submit to a new Committee, the question of the supersession of Officers of Her Majesty's British Army by those of Her Majesty's Indian Forces, I am directed to transmit, for the information of His Grace, the accompanying draft instructions which Mr. Cardwell suggests, for the Committee to be assembled.

See next page.

I am to add that Sir William Melbourne James, one of the Vice-Chancellors, and General Sir Charles Yorke, G.C.B., have consented to serve on the proposed Committee; and Mr. Cardwell will be glad if His Grace will nominate an Officer of Her Majesty's Indian Forces, of sufficiently high rank to have no personal interest in the question, to be their colleague.

I have, &c.,
(Signed) H. K. STORKS.

No. 46.

Major-General T. T. Pears, C.B., to the Under Secretary of State for War.

India Office, S.W.,
3rd August, 1869.

Sir,

I AM directed by the Secretary of State for India in Council to acknowledge the receipt of your letter of the 29th ultimo, transmitting, for His Grace's consideration, with reference to my letter of the 21st idem, No. 3617 $\frac{692}{W}$, draft instructions which Mr. Cardwell suggests for the Committee about to be appointed to consider the relative position of the Colonels of the British and Indian services.

2. In reply, I am instructed by the Duke of Argyle to return the draft, with certain proposed amendments noted in red ink in the margin; and I am to observe that the suggested allusion to the Royal Warrant of 15th June, 1864, appears calculated to limit unduly the scope of the Committee's enquiries, and at the same time to give them a wrong direction.

3. The tendency of that Warrant has not been to accelerate the promotion of the Colonels of the Indian Army, although by the operation of one clause removing the names of Artillery and Engineer Officers from the Indian List it has accidentally produced that effect to a definite extent.

4. With this exception, which involves an accomplished fact that cannot now be disturbed, the operation of the Warrant in question upon the Officers whose rapid promotion is complained of has been nil, they having all been promoted under the regulations of the old Indian Service. On the other hand, the Staff Corps Officers whose promotion will be affected by that Warrant, beginning at Colonel W. B. Salmon, will, as is well known, have their promotion greatly retarded under its operation, being placed in the same list for promotion with the British Officers, according to the date of Commission.

5. The Duke of Argyle recommends, therefore, that the words "existing regulations" shall be substituted as shown in red ink in the margin.

6. I am to add, for the information of the Secretary of State for War, that Lieutenant-General Hancock, of the Indian Army, has been appointed by the Secretary of State for India in Council to serve on the proposed Committee, and has been instructed to report himself to you, with a view to being informed of the time and place appointed for the Committee to meet.

I have, &c.,
(Signed) T. T. PEARS, Major-General,
Military Secretary.

Enclosure in War Office letters, dated 29th July, 1869, Nos. 44 and 45.

INSTRUCTIONS for the Committee appointed to consider the question of the Supersession of Officers of Her Majesty's British Army, by those of Her Majesty's Indian Forces.

1. The Committee will enquire into the effect of the Royal Warrant of the 15th June, 1864, on the present and future relative position of Officers of the two Services.

2. If the Committee should be of opinion that that Warrant operates unjustly towards Officers on the British Establishment they will report what alteration should be made in it, having regard to the Parliamentary guarantee given to Officers of the Indian Establishment by the Acts of 1858 and 1860.

3. The Committee will limit their recommendations to courses which shall not involve increased charges upon either Imperial or Indian Revenues.

Enclosure in India Office letter, dated 3rd August, 1869, No. 46.

INSTRUCTIONS for the Committee appointed to consider the question of the Supersession of Officers of Her Majesty's British Army, by those of Her Majesty's Indian Forces.

1. The Committee will enquire into the effect of the *existing Regulations* on the present and future relative position of *the Colonels* of the two Services.

2. If the Committee should be of opinion that *those Regulations* operate unjustly *or unequally on the interest of Officers of either* Establishment, they will report what alteration should be made in *them*, having regard to the Parliamentary guarantee given to Officers of the Indian Establishment by the Acts of 1858 and 1860.

3. The Committee will limit their recommendations to courses which shall not involve increased charges upon either Imperial or Indian Revenues.

APPENDIX C.

No. 1.

General W. R. Mansfield to the Military Secretary.

Sir, Head-Quarters, Simla, 15th August, 1865.

I HAVE the honour, with much deference, to solicit the attention of His Royal Highness the Field-Marshal Commanding-in-Chief, to some very important considerations affecting the position of the superior officers of Her Majesty's British Forces. Thus, under the operation of the rules of promotion in the several services, the following full Colonels of the British Army now serving in India, viz : Colonel T. Williams,* C.B., 4th Foot; Colonel D. Rainier, 98th Foot; Colonel E. A. Holdich, C.B., 20th Foot; Colonel A. C. Errington, 51st Foot; Colonel S. T. Christie, C.B., 80th Foot; Colonel E. Haythorne, 1st Foot, have been superseded in India by the promotion to the rank of General Officer of Colonels in the local service.†

2. It is seen that all the Colonels on the local lists in India of the year 1856 are now promoted to the effective rank of Major-General.

3. According to the averages of promotion in the British Army the Colonels of 1854 will probably not have been absorbed in the rank of Major-General till the year 1868.

4. The supersession of the Colonels belonging to Her Majesty's British Forces by the Indian local Colonels cannot fail to go on at an accelerated ratio for the following reasons, viz., that the number of Colonels on the British lists is immeasurably greater than that in the local Indian lists, in proportion to the number of General Officers respectively borne on the two establishments. Thus the number of Generals of the different degrees is 272, in the British Service; the number of Colonels, by June Army List, is 394; the number of Generals on the local list is 208; the number of Colonels, by the last Bengal Army List, is 123.

5. It has always been believed that the inequality to which attention has been invited, was in former times forbidden, under the orders of his late Majesty King William IV.

6. For some years the practice obtained of promoting all officers to the local rank of Major-General in India, who were immediately senior to officers of the Indian Service, who had been promoted by the Queen's brevet.

7. In 1854 a new system of promotion was established, the old general brevet being abolished. After some correspondence it was ruled by the late Lord Hardinge, when Commanding-in-Chief in England, that, as a consequence of the new system of promotion, the practice above alluded to, known under the name of Fane promotion of Major-Generals, should no longer be permitted to exist.

8. Appeals against supersession have from time to time been made by Colonels of the British Service serving in India, which have been set aside under the ruling above quoted.

9. The question might therefore be allowed to rest, but for the fact that lately the Right Honourable the Secretary of State for India has, with regard to all other ranks, declared the very principle on the assertion of which the quondam promotion of Fane Major-Generals rested; and, secondly, the frequent supersession of British Colonels which is now proceeding.

10. Thus it is now seen (*vide* Secretary of State's Despatch, D/17th June, 1864), that Lieutenant-Colonels, Majors, Captains, and Lieutenants, are promoted in the local gazettes in India, to put them on a par in India with officers who obtained rank under the Staff Corps Warrant.

11. This having thus been practically asserted, with officers of inferior degree, the enquiry is now made by the old Colonels serving in India, whether the like principle should not also be applied in the case of Line Colonels who have been superseded by Major-Generals of the Indian Service.

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* Appointed Major-General with temporary rank, February 1865.

† Colonel T. Williams has been superseded by all Major-Generals on the Indian list between Sir W. Coghlan and Major-General J. E. Landers, viz. : 13, including Major-Generals Showers, C.B., McLeod and Troup, C.B., commanding divisions.

Colonel Rainier, 98th, by all below Major-General Lang, viz., 17, including the above-mentioned officers commanding divisions.

Colonel Holdich, 20th, by all below Major-General Showers, viz., 16, including Major-Generals McLeod and Troup, commanding divisions.

Colonel Errington, 51st, by all below Major-General Welchman, viz., 12.

Colonel Christie, 80th, by all below Major-General Welchman, viz., 12.

Colonel E. Haythorne, Adjutant-General, by all below Major-General Landers, viz., 6.

12. The argument against this is, that the Indian Service is not the only one which presents a separate list of promotion, entailing such effects. Thus it is maintained that the Royal Artillery and Royal Marines being on separate lists, occasional supersession of the Infantry and Cavalry Colonels takes place with regard to those branches of the Service, and *vice versâ*.

13. It is then argued that, if it be not objected to in those cases, there can be no reason for making an attempt to set aside the inequality in the case of the Indian Officers.

14. In the first place, it may be observed, in answer to this argument, that it was always understood in the army at large that it had been distinctly stipulated, when the rank of General was granted to the Indian Officers, that the concession should not in any manner prejudice the condition of officers of like standing belonging to the Royal Army.

15. But, secondly, there is a further reason; the analogy suggested by the Royal Artillery and Royal Marine services does not stand the test of examination. The officers of those branches of the Service do not generally come into contact with Cavalry and Infantry officers.

16. Out of India, the ordinary divisional and brigade commands do not fall to them, whether in war or in time of peace.

17. In India, on the other hand, the Indian Major-Generals, who are now superseding the Colonels of the British Army in considerable numbers, will most assuredly take command of the latter as Generals of Divisions in the several Indian Presidencies, the very result being thus produced, against which, as we know, it was deemed formerly necessary to guard.

18. With respect, then, to the principal adopted for other ranks, I would venture to intimate, for the general consideration of His Royal Highness, that no good reason can be assigned for making exception with regard to the particular rank of Major-General.

19. It has appeared to me, therefore, the subject would seem to me to be one which may be, with propriety, referred for the consideration of His Royal Highness and of the Right Honourable the Secretaries of State for India and War, with a view to the application of the old rule, by which the local rank of Major-General is given to officers having the rank of Colonel, who are superseded by the promotion of officers of the local armies of Bengal, Madras, and Bombay.

20. Supposing the old rule to be re-established, as above suggested, it would appear necessary, with regard to the Indian Service, on the other hand, that if that were to occur, which is apparently impossible from the constitution of the lists of the several Armies—viz., the case of a Line Colonel being promoted in the ordinary course to the rank of Major-General, who might be junior to an Indian Colonel, the latter should be promoted locally in India to the rank of Major-General, in order to preserve perfect uniformity and equality between the two Services.

21. It is to be remarked that the rank of Major-General being conferred on Indian Officers, not only for India, but for all the world, by the late changes, the state of things to which notice has been attracted, is even more serious for the officers of the British Army than was originally contemplated when the remedy above alluded to was applied.

22. It may perhaps be assumed that, in practice generally, the two sets of officers would not come into contact, except in India.

23. The experience of the war of 1855-6 does, however, lead us to believe that in any development of the military resources of Great Britain for European war, this contingency would in all probability take place.

24. The argument contained in this letter would be hardly complete, were I to omit to draw the attention of His Royal Highness to another general result of the constitution of the lists of Indian Field Officers.

25. Thus, owing to the number of Colonels, Lieutenant-Colonels, and Majors being proportionately less to the General Officers as compared with the like ranks in the British Army List, an officer in the former, having been promoted to the rank of Field Officer, runs through the several ranks more rapidly than an officer in the British Service till the rank of General is reached.

26. Officers who became Brevet-Majors in 1858, are now Lieutenant-Colonels in ordinary succession in the Indian Lists.

27. According to the last Royal Annual Army List, it is apparent that there are great numbers of Majors of 1855.

I have, &c.

(Signed) W. R. Mansfield, General,
Commander-in-Chief in India.

P.S.—I would more especially invite your attention to the very important correspondence

which took place on the matter of this letter during the Command-in-Chief of the late Lord Hill. The letter, which more particularly lays down principles and rules, is that from his Lordship to the President of the Board of Control, dated March 25th, 1834, in which the relative position of the King's officers and those of the late Honourable East India Company is discussed in the most masterly manner; subsequent to the writing of that letter, took place the correspondence between the late Sir Henry Fane and the Government of India, which resulted in the conferring of the local rank of Major-General on such officers of the King's Service as had been superseded by those of the Honourable Company. I gather that copies of that correspondence must be in existence in your office, and I therefore abstain from sending copies, unless you should wish me to do so.

(Signed) W. R. MANSFIELD.

No. 2.

Extract from letter of Colonel R. De Salis, dated London, 28th January, 1869.

(Private.)

Dear General Forster,

YOU asked me to write to you privately on the subject of the supersession of Queen's officers by those of the Royal Indian Army.

1. My personal grievance is, that I served in the mutiny war, and that 38 of the Indian officers who were then junior to me, and some of them actually under my command, are now promoted over me to be Generals. (I give you a list.)

2. The Colonels of 1863, in the Indian Army, are now becoming Generals, but in the Queen's Army, the Colonels of 1855, a difference of *eight years.*

3. The last Indian General promoted is Major-General Galwey, who was a Colonel of 9th May, 1863. In our own service, Colonel Thesiger (30th April, 1863) was his senior, and I find in the monthly Army List, from Colonel Prince Edward of Saxe Weimar down to Colonel Thesiger, there are the names of 264 *Colonels* who, like myself, have been superseded.

4. If we in this country feel the anomaly, it is much more obvious in India, where our officers actually in command of troops have to give way to juniors, and between the Brigadier-Generals of the Royal Indian Army and the Queen's, there is an average difference of about four years' rank as Colonel.

Thus, in the Artillery, a Colonel who had belonged to the Company's Service would receive a brigade some three or four years before another Artillery Colonel, and thus might actually command a senior officer of *his own corps.* Brigadier-General Stock commands at Bombay, and is junior (as Colonel of 1866) to both the Lieutenant-Colonel and Major of 1st Battalion 23rd Regiment, which is stationed at Bombay under his command. Similarly at Mhow, Colonel Raines, 95th, as Colonel, was senior to Major-General Sir G. Malcolm, who commands the Mhow Division.

5. It is difficult to understand the Royal Warrant when it refers to the amalgamation in the Army Lists of 1861, 1862, 1863, and 1864. There appeared a list of *amalgamated Colonels* which suddenly disappeared!!! There is now a *fresh* amalgamated list, commencing in 1866. Perhaps the promotions to the rank of General in the Indian Army might be temporarily suspended until enquiry would be made.

No. 3.

Colonel H. Greathed to the Military Secretary.

Sir, United Service Club, 3 March, 1869.

I HAVE the honour to request that you will be pleased to submit to His Royal Highness the Field-Marshal Commanding-in-Chief, my most respectful appeal on the subject of the supersession of the Colonels on the British List by those on the Indian List of Her Majesty's forces.

The Royal Warrant, 1st January, 1862, provided for the promotion of both British and Indian Colonels in a manner which, looking at results, would have been fairly satisfactory to the Officers of both Services, and, apart from the accidents of service, would have been fairly equal in the distribution of promotion in both Lists.

But, by the adoption of the Royal Warrant of 1864, the promotion of the Colonels on the Indian List to the rank of Major-General, as compared with that of the Colonels on the British List, is so excessive, that nothing but a suspension of the Warrant, as regards these ranks, until further inquiry, can mitigate the damage which has been done, not only to the Colonels, but to every class of *Field Officer, at least,* on the British List. The last Officer on the Indian List promoted to the rank of Major-General, is a Colonel of 1863, who thereby supersedes a Colonel of 1855 on the British List.

The fears that were felt by Officers of the Indian Service of stagnation in promotion, have been so utterly falsified in the event, that I respectfully submit a strong case exists for the re-adjustment of rank, in which the fair equality of promotion intended by the framers of the Warrant of 1862 may be carried out.

As all Officers in Her Majesty's Service are now eligible for employment in all parts of the dominions of the Queen, *all* must have an equal interest in fair and equal promotion, this supersession may at any time become a very practical grievance, full of evil to the public service. It would not become me to do more than indicate this view of the question.

I have, &c.
(Signed) EDWD. H. GREATHED.

No. 4.

Colonel H. J. Warre to the Military Secretary.

Sir, 44, Cadogan-place, London, S. W., 3 March, 1869.

As the operations of the Royal Warrant for the amalgamation of the Indian with the Royal Army are acting very prejudicially to Colonels, and, indeed, to all Officers of the Queen's Service, I take the liberty of drawing the attention of His Royal Highness the Field-Marshal Commanding-in-Chief, to the large number of Colonels of the former Indian Army who are now obtaining the rank of Major-General, under the War Office Circular (No. 867) of the 15th June, 1864.

Having served in India in command of the 57th Regiment, as Brigadier in command at Mhow, and as Acting Military Secretary to the General then Commanding-in-Chief (Lord Strathnairn), I had every opportunity of learning the provisions of the Royal Warrant, and was satisfied that it was formed in a spirit of justice to both Armies; but I was not aware that its provisions had been altered, until my attention was recently called to the interpretation put upon the Warrant by the Circular above alluded to.

The Officers of the late Indian Army not only derive all the benefit of their rank in England, and in all Her Majesty's Possessions, instead of, as formerly, *only* in India; but the increased inducements offered to Officers in pensions, &c., on retirement, have reduced the list of Senior Officers so rapidly that it is now 12 months since the separate list of Indian Colonels was exhausted; and Officers of rank far junior to those in the Queen's Service, have been promoted to the rank of Major-General, so that, if I am correctly informed, whereas Colonels of the year 1855 are still unpromoted in the Queen's Army, Colonels of 1863 are now being promoted in the Madras Service.

If such is the case, and I have every reason to believe that it is so, I feel sure that His Royal Highness will endeavour to correct the evil, and will pardon my trespassing upon his valuable time to support my own claims and those of my brother Officers of Her Majesty's Royal Army.

I have, &c.
(Signed) H. J. WARRE, Colonel, Half-Pay,
late 57th Regiment.

No. 5.

Colonel R. Wardlaw to the Military Secretary.

Sir, United Service Club, London, 6 March, 1869.

I BEG leave respectfully to bring under the notice of His Royal Highness the Field-Marshal Commanding-in-Chief, the great injustice under which the Colonels of Her Majesty's Army are suffering by being superseded by Officers of the old East Indian Establishment, under

the Amalgamation Warrant, and I venture to hope that His Royal Highness will give us his able assistance towards a remedy.

I have, &c.
(Signed) R. WARDLAW, Colonel, Half-Pay.

No. 6.

Major-General H. P. de Bathe to the Military Secretary,

Sir, United Service Club, 8 March, 1869.

I HAVE the honour to request that you will receive this my most respectful remonstrance against the present supersession of Her Majesty's Officers by those of the late India Company's *Officers.**

I understand that by the altered Warrant of 1864, in one year or so the Indian Generals will be placed on the same list as Her Majesty's present General Officers, when I should find numbers of Officers junior to myself at the time of the amalgamation, taking rank and command over me.

I trust, therefore, that His Royal Highness the Commander-in-Chief will be pleased to take such steps as may lead to the restoration of the former Amalgamation Warrant of 1862.

I have, &c.
(Signed) H. P. DE BATHE, Major-General,
Late Scots Fusilier Guards.

No. 7.

Colonel C. C. Shute to the Military Secretary.

Sir, Brighton, 11 March, 1869.

I HAVE the honour to state how much I feel the supersession by the Colonels of the Indian Army over those on the English List, consequent on the effect of the Warrant of June 1864.

This has been such a general subject of disappointment of late by the Junior Major-Generals and Senior Colonels of our Army, that it is unnecessary for me to trouble you with details, and I would only respectfully express a hope that His Royal Highness the Field Marshal Commanding-in-Chief will be so kind as to exert his influence to have this grievous wrong remedied.

I have, &c.
(Signed) C. C. SHUTE, Colonel,
Commanding 4th Dragoon Guards.

No. 8.

Colonel Percy Hill to the Military Secretary.

Sir, United Service Club, 24 March, 1869.

HAVING understood that it is the intention of Her Majesty's Government to inquire into the causes of the supersession of Colonels of the Royal Army by the promotion to Major-General of very Junior Officers of the Indian Service, I venture to place my individual case before His Royal Highness as one which affords a fair criterion of the manner in which those situated like myself are affected.

I am a Colonel of 1857, and towards the end of the year 1866 I found myself passed over in rank for the first time. Since that date a very large number of Indian Service Colonels have obtained promotion, and thereby superseded me in a mode which I believe I am correct in stating was never contemplated by the Amalgamation Warrant.

In last night's "Gazette" a further promotion has appeared, and there is now a vacancy which, if filled, will promote an Officer over the heads of myself and 283 other Colonels of the Royal Army.

Less than two years since, some of those who have superseded me were doing duty under my command.

Under these circumstances, I humbly submit that my petition is not more than is reason-

* *Sic* in orig.

able, in asking that further promotions may be stayed until due inquiry has been made, and that upon my own promotion to Major-General my rank may be antedated to such period as will reinstate me in the same relative position which I should have held had the original provisions of the Amalgamation Warrant been carried out.

I have, &c.
(Signed) PERCY HILL, Colonel, Half-Pay,
Rifle Brigade.

No. 9.

Colonel Robert Bruce to the Military Secretary.

Sir, Durdham Down, Bristol, 10 April, 1869.

I HAVE the honour to request you will be so good as to submit to His Royal Highness the Field-Marshal Commanding-in-Chief my appeal against the injustice of being superseded by Colonels of the Indian Army far junior to me.

I have, &c.
(Signed) ROBERT BRUCE, Colonel, Half-Pay,
2nd Foot.

No. 10.

Colonel G. V. Maxwell to the Military Secretary.

Sir, Army and Navy Club, London, 17 April, 1869.

ON my return to England within the last few days, after 11½ years' service in India, I have been informed that the constant supersession of Colonels of the Royal by those of the Indian Army, has been brought to the notice of His Royal Highness the Commander-in-Chief.

Although smarting under the new system, and deeply feeling the mortification which every soldier feels at having his junior going over his head, a feeling of submission to orders has hitherto prevented me from venturing to express that mortification; but as the subject has been mooted, I most respectfully beg to represent how I have been situated.

I have just had a five-year Brigade Command, and during that time was often in command of either the Lahore or Peshawur Division.

At the expiration of my command, I was the Senior Brigadier-General in the Bengal Presidency, and on returning to my regiment to prevent my having to serve under an Officer of the Indian Army who was five years my junior as a Colonel, I was obliged to go on leave of absence, although I was in good health, and fit for any active service. Had I remained in India a few weeks more, I should have had an Officer (of the Indian Army) promoted over me as Major-General, who was not a Captain until more than two years after I had obtained my present rank of Colonel.

I have, &c.
(Signed) G. V. MAXWELL, Lieut.-Colonel, 88th Foot,
and Colonel.

No. 11.

Colonel J. Ramsay Stuart, to the Military Secretary.

Selby Villas, Anerley,
Sir, 31st May, 1869.

As one of the Senior Colonels who are now being superseded by those of the Indian Service under the provision of the Indian Amalgamation Warrants, may I be allowed to solicit the powerful influence of His Royal Highness the Field-Marshal Commanding, with the view to a removal of so grievous an act of injustice to the Officers of the Royal Army.

I have, &c.
(Signed) J. RAMSAY STUART, Colonel, Half-Pay,
21st Fusiliers.

No. 12.

Brevet-Colonel J. Conolly to the Military Secretary.

United Service Club,
1st June, 1869.

Sir,

HAVING been informed that an enquiry is about to take place into the late supersession of Colonels of the Royal Army by Officers (their juniors) in the Indian Service, I venture respectfully to express a hope that we, the sufferers by this system, may have the countenance of His Royal Highness the Field-Marshal Commanding-in-Chief in our endeavours to obtain a redressal of this injustice. Several have already passed over me.

I have, &c.
(Signed) JAMES CONOLLY,
Brevet-Colonel, Unattached.

No. 13.

Colonel C. Foster to the Military Secretary.

Arthur's,
13th June, 1869.

Sir,

I HAVE the honour to request you will take a favourable opportunity of bringing to the notice of His Royal Highness the Commander-in-Chief the grievance that I (in common with so many other Colonels) suffer from the promotion of Colonels of Her Majesty's Indian Army, junior to us, to the rank of Major-General.

It is rumoured that the Indian Government propose a "Local rank" in India as a solution to the question, but I am sure you will see that this would not remove the grievance complained of.

When the Duke of Wellington and Lord Hill considered a local rank in India sufficient to satisfy the just susceptibility of the British Army, the Officers of the Indian Army had no rank whatever west of the Cape of Good Hope, but now in the words of the Horse Guards Memo. they have "rank and precedence according to their Commissions," in England and everywhere else in Her Majesty's dominions.

The supersession therefore is no longer confined to India, but is universal.

In 1871, or 72, the present Warrant of 1864 will affect the Staff Corps as it does us. They will in their turn be superseded by the Local Army in their promotion from Colonel to Major-General by a period, it is calculated, at 9 to 12 years, and it is very probable that the Indian Government will then be as anxious to have the Warrant revised as we are now.

I have, &c.
(Signed) CHARLES FOSTER,
Colonel.

APPENDIX D.

REPORT of the Committee appointed to inquire into the Question of the Supersession of British Colonels by Colonels of Her Majesty's Indian Army.

Colonel C. R. EGERTON	.. .. ..	*President.*
Major W. MARVIN G. E. COCHRANE, Esq.	.. .. ..	*Members.*

1. Before the introduction of the promotion arrangements of 1854, the Lieutenant-Colonels and Colonels of the Royal and East India Company's Services rose together to the rank of Colonel and Major-General, by the operation of the General Brevets granted by the Crown, from time to time, at irregular intervals.

2. Irrespective of the General Brevets, the Lieutenant-Colonels of the East India Company's Armies, under the different constitution of their Service, were occasionally promoted to the rank of Colonel by regimental line step, before they became entitled to that rank by the Royal Brevets. The Lieutenant-Colonels of the Royal Service (those of the Royal Artillery and Royal Engineers excepted) were dependent solely on the Brevets for their rise to the rank of Colonel.

3. Complaints being made of the supersession to which the Royal Lieutenant-Colonels were subjected from this cause, Her Majesty's Government, at the instance of the Duke of York, interfered, and the rise of the Company's Lieutenant-Colonels to the rank of Colonel by regimental advancement was stopped (1806). This rank was subsequently (1829) restored, but only on the condition that a rule was to be established to protect the senior Lieutenant-Colonels of the Royal Army serving in India from supersession by a junior Lieutenant-Colonel of the Company's Army.

4. In the course of the discussion which took place, the Duke of Wellington laid down this principle :—*

"An Officer who has distinguished himself at the head of one of His Majesty's Regiments, "and who may thereby have rendered essential service at an important moment, must not be "liable to be superseded by one junior to himself in the rank of Lieutenant-Colonel, either as "Colonel, or, subsequently, as Major-General."

5. This principle was repeated by Lord Hill, in his letter of the 25th March, 1834 (see Appendix A).

6. In consequence of the understanding come to on this occasion, it was arranged that, on the promotion of a Company's Lieutenant-Colonel by the regimental line step, the local rank of Colonel from the same date should be conferred on all the Lieutenant-Colonels of His Majesty's Army serving in India who might be seniors as such to the Company's Officer so promoted, in order that they might hold the same position with him as Colonel which they had previously held as Lieutenant-Colonels.

7. Another difficulty subsequently arose. The rank of the Company's Colonel, attained by the regimental line step, was permanent, and qualified its possessor to rise to Major-General by the General Brevets; but the local rank granted to the Royal Lieutenant-Colonels under the above arrangement, being temporary only,† did not qualify for promotion by the Brevets.

With the view, therefore, still further to maintain the principle insisted upon by the Duke of Wellington and Lord Hill, it was ruled, that when the Company's Colonel, promoted to that rank by the regimental line step, obtained promotion to Major-General, by Royal Brevet, the local rank of Major-General should be conferred on the local Colonels of His Majesty's Service in India, who were senior as such to the Company's Colonel so promoted.

8. This local rank ceased on the officers quitting India, and did not involve the loss of Staff Appointments, or of Command of Corps, which permanent possession would have carried with it, under the ordinary practice of the Service.

9. No steps were taken to protect the Royal Officers from supersession elsewhere than in India, simply, it is presumed, because at that time the East India Company's Officers held no rank except within the limits of their Charter, where the "Fane" Brevets also held good.

10. The Royal Warrant of 6th October, 1854, inaugurated a new system of promotion. An establishment of General Officers, based on the supposed fair requirements of the respective armies, was set apart for each Service; and the performance of a certain amount of regimental or other duty—not standing in the list, as before—was henceforth to be the qualification for the rank of Colonel. No provision was made in this Warrant to secure the British Colonels from supersession by the East India Company's Officers in the rank of Major-General.

11. The last General Brevet granted by Her Majesty (20th June, 1854) had been issued just before the Royal Warrant of 6th October, 1854, appeared. It promoted to Major-General the Colonels of both Services of date on or before the year 1846.

12. At the date of the Warrant, the British and Indian Colonels started apparently on equal terms for the rank of General Officer. In proceeding, however, to carry out its provisions, a very great piece of good fortune fell to the Colonels of the Indian Service. In the British Service the fixed establishment of Generals was *less* than the numbers then existing, and the supernumeraries were ordered to be gradually absorbed. In the Indian Service the new establishment was *much larger* than the numbers then existing, and promotions were necessary to complete it. In making these no less than 95 Colonels of the Indian Service were raised, on the same day, to the rank of General Officer, some of them of ten months'

* See Memorandum dated 18th September, 1827, Appendix F.

† "It is perfectly understood, from the nature of the respective Services of the King and Company, that in the former the Brevet must necessarily be temporary, and in the latter, permanent." (*See* letter from Lord Hill, dated 25th March, 1834, Appendix A.)

standing only as Colonels, and the promotions were carried down to 1st February, 1854, or seven years in advance of the Colonels of the British Service.

13. The promotion of the Indian Colonels has also been accelerated by the amalgamation of the forces in 1860-61, particularly by the special annuities on retirement, offered in the latter year by the Secretary of State for India, of which many of the senior officers of the Indian Armies availed themselves.

14. In seeking for the causes of the more rapid rise of the Indian Officers, it must not be overlooked that the comprehensive system of retiring full-pay pensions in force in the Indian Service has yearly relieved the Indian List of many of the senior officers, and thus cleared the way for the succession of their juniors to the rank of General Officer.

15. From the foregoing digest of the rules and regulations that have from time to time governed the promotion of officers to the higher grades in the Services of the Crown and the late Honourable East India Company, it will be seen, that from the arrangements of 1796 to the Royal Warrant of 1854, it was an admitted principle in regard to such promotion that it should proceed *pari passu* in each; and that the Officers of both the British and Indian Armies should be equally considered in a just participation of all advantages of military rank.

16. The frequent alterations and modifications of the rules which took place seem all to have had this end in view, and a reference to the voluminous mass of correspondence that is extant on the subject, between successive Commanders-in-Chief of the Imperial Army and the East Indian Authorities, very forcibly illustrates the jealous care with which the due balance of interests of the officers of either service was watched and protected.

17. The supersession of *one* Colonel of the British Army by a Colonel of the Indian Army in 1833, drew forth a correspondence which culminated in the letter of the late General Lord Hill to the President of the Board of Control, dated 25th March, 1834 (*see* Appendix A), which is referred to by Sir William Mansfield (*see* Appendix B), and is considered by him to be "exhaustive of the whole subject"; and in which his Lordship most peremptorily insists on the imperative necessity of maintaining the principle of equality of advancement to the higher grades.

18. His Lordship reiterates the dictum of the late Duke of Wellington on the subject, and in the course of an elaborate argument in support of the principle it involves, proceeds to remark:—

"The only safe and unerring principle on which the system of promotion can be soundly "and justly regulated as between the King's and the Company's Officers in India, appears to be "that which has been already alluded to; that under no possible circumstances can it be per-"mitted that a Lieutenant-Colonel in the King's Service should be superseded by one junior "to himself in the rank of Lieutenant-Colonel, as Colonel, or subsequently as Major-General."

Again,

"In all that has been said throughout the voluminous discussions which have taken place "upon the subject of Military promotions in India since 1796, the ruling principle has ever "been so to uphold the position of the King's Officers, that they might not suffer in any colli-"sion of interests with the Officers of the Company's Army in their character or military "dignity."

19. It cannot be doubted that this principle of military equality in the higher ranks, so ably vindicated by the Duke of Wellington and Lord Hill, is the only safe and equitable basis upon which the promotion of two Armies, acting in conjunction, both in cantonments and in the field, serving the same Sovereign, and under the orders of one Government, should be regulated.

20. It appears that, at least up to the date of the Royal Warrant of 6th October, 1854, it was as between the British and the Indian Armies, as far as practicable, always so regulated.

21. It remains to the Committee to point out how the case now stands, and how far in the effects of the before-mentioned Royal Warrant, as well as that of 15th June, 1864, this principle has been departed from, and what grounds of complaint exist on the part of either Service.

22. The Committee find that the Generals now in course of promotion on the Indian List were Colonels of the year 1863, and Lieutenant-Colonels of 1858-59.

23. The last Indian General promoted (there are at the present time some vacancies unfilled), passed over and superseded no less than 230 Colonels of the British Service, the seniors of whom date as Colonels of 1854 and 1855, many of whom distinguished themselves at the head of Her Majesty's Regiments in the several actions in the Crimea, at Alma, Inkermann, and Balaklava, and were mentioned in despatches.

24. More marked, and more anomalous still are the cases of the Colonels of the British Army, who commanded brigades, or independent columns, or filled high Staff situations during the Indian Mutiny, and who are now in course of supersession by Officers of the Indian Army (many of whom no doubt took part in the same Field services), who, at that date, held only the rank of Major.

It is only necessary to enumerate the following:

Colonel Haythorne, C.B.
" Sir E. Wetherall, C.B., K.C.S.I.
" Sir J. Douglas, K.C.B.
" Sir E. Greathead, K.C.B.
" Sir J. Jones, K.C.B.
" Sir D. Kelly, K.C.B.

25. By the Horse Guards Memorandum of 25th April, 1855, (Appendix G), the rank of Her Majesty's Indian Forces was, by Her Majesty's Command, made general, to give precedence with Officers of the Regular Forces in all parts of Her Majesty's dominions.

26. Supersession previously was only felt in India, but now it follows the Officers of the British Army, and affects them wherever they are associated with Officers of the Indian Service in all parts of Her Majesty's dominions.

27. It is now a more grave and substantial injury than at the time Lord Hill so forcibly condemned it.

28. It is not only in respect to the Senior Colonels of the British List that the operation of the Royal Warrant of 15th June, 1864, has had an injurious effect; but the position and prospects of those Colonels of the Indian Staff Corps who head the Amalgamated List, and will have to rise on that List, have, if possible, been more grievously and detrimentally affected, and their case equally demands a remedy.

29. At the present average rate of promotion to the rank of Major-General on the British List, it will take 15 *years* to promote the Colonel next before Colonel Salmon, a Staff Corps Officer, who heads the Amalgamated List.

30. At the present average rate of promotion to the rank of Major-General on the Indian List, it will take three years to promote the Colonel next before Colonel Salmon on that List. Hence, under existing arrangements, there will be a difference of 12 years in the date of rank as Major-General between Colonel Salmon and the next senior to him on the Indian List (Colonel Shakespear), although their commissions *as Colonel* date on the same day, and the former entered the service 14 *years before* the latter.

31. The Committe beg also to draw attention to the Appendix C, containing the names of Colonels of the British Army *now in India*, who have been superseded in the rank of General Officer by Officers of the Indian Army; and to refer especially to the cases of Colonel Goodwyn, 41st Regiment, and Colonel Maxwell, 88th Regiment, who are Colonels of 19th and 23rd March, 1858, respectively, and are both commanding brigades in Bengal; whereas Major-General J. D. Macpherson, Bengal Infantry, whose Colonelcy bears date 5th April, 1858, attained the rank of Major-General on the 24th January, 1867, and is now serving as Commissary-General in Bengal, where Colonels Goodwyn and Maxwell served with him as his seniors in the rank of Colonel. Goodwyn and Maxwell, who are still in Bengal as Brigadiers, are therefore now liable at any moment to serve as subordinates to Major-General Macpherson.

32. Colonel Longden was in like manner superseded while holding the important appointment of Adjutant-General of the Bengal Presidency.

33. His predecessor, Colonel Haythorne, was similarly superseded.

34. The Committee are of opinion that these supersessions should be remedied by the adoption of a system of local rank in the grade of Major-General, corresponding with that which formerly prevailed in India, but based upon the dates of commission as Colonel instead of that of Lieutenant-Colonel, as proposed in paragraph 42.

35. The circumstances which have occurred to accelerate the promotion of the Officers of Her Majesty's Indian Army, and to subject the Colonels of the British Army to constant supersession, having thus been brought to notice, the Committee now proceed to the consideration of the means of remedying the evil complained of

36. To interfere with the rule laid down by the Royal Warrant of 15th June, 1864, for the succession of the Colonels of the Indian Forces to the rank of Major-General, does not seem possible. That rule was forced on Her Majesty's Government by the remonstrances of the Officers, and the proceedings in Parliament in connection therewith. It cancelled Regulations which but a short time before had been carefully considered, and specifically fixed by Warrant. The members of an expiring service were pronounced on all sides to have the strongest claims to indulgent consideration, and the privilege of continuing to rise, as before the amalgamation, on their own list, has been distinctly promised to the comparatively few Indian Officers remaining in the Service. To now cancel this assurance appears to the Committee to be impracticable.

37. Had it been provided (in April 1855, when the rank of the Indian Officers was declared by Lord Hardinge to be good in all parts of Her Majesty's dominions), that the rank of the Indian Colonel promoted to Major-General should be local only until his senior as

Colonel of the British Service had been likewise promoted, and had the system of local rank to the British Colonels in India been continued, the difficulty now complained of could not have arisen. Any condition tending to this result is now, however, not to be thought of. On the other hand, to augment the British List of General Officers to such an extent as would completely equalize the promotion in the two Services must be held to be impossible, so great would be the expense which such a measure would entail.

38. Eventually there will be between 90 and 100 General Officers added to the British Establishment,* on account of the Indian Staff Corps. Of these, about one-half will be transferred in a batch, as provided by Article 24 of the Warrant of 3rd February, 1866; and, if the provisions of Article 23 of the same Warrant were to be strictly enforced, the remainder (say 45) would be added from time to time in the order in which the Indian Staff Corps Colonels would have been promoted had they remained on the Indian Establishment, instead of being placed on the Amalgamated List of Colonels of the British Army.

The latter addition would probably commence about the end of the year 1871, and terminate in 1877.

39. Although, for the reasons stated in the latter part of paragraph 37, *complete* equalization of promotion in the two Services cannot at present be secured, the Committee beg to recommend, as a partial amelioration of the present condition of the Colonels of the British Army (including the Staff Corps Colonels on the Amalgamated List), that 45 additional Major-Generals be forthwith created, in anticipation of the promotions (about eight annually) which, under the operation of Article 23 of the Warrant of 3rd February, 1866, would become due to the British Establishment in the years from 1871 to 1877, on account of the Indian Staff Corps.

40. The immediate expense of such a measure (as shown in detail in Appendix D.) amounts to about 32*l.* 4*s.* 6*d.* a-day, or 11,762*l.* 2*s.* 6*d.* a-year. This, however, would only be a temporary charge on Imperial funds, as, probably, in the year 1871, the first eight of these additional General Officers at 25*s.* a-day each, amounting in the aggregate to 3,600*l.* a-year, would become chargeable to Indian revenues, so that, in little more than three years, commencing in 1871, it may be expected that the Imperial funds would be entirely relieved of the proposed additional charge.

41. It may be here mentioned that the diminution of this charge in so short a period as three years arises from the circumstances that while the charge to the Imperial Government for each Colonel promoted, under the recommendation in paragraph 39, amounts to an average of 14*s.* 5*d.* a-day only, being the difference between the half-pay of the promoted Colonel, and the established pay of a General Officer, the credit from the Indian Government for each General Officer, as he is brought on the establishment on account of the Staff Corps, will be 25*s.* a-day.

42. That, simultaneous with these promotions, the dates of the Commissions of all the present Major-Generals of the British Army whose Colonelcies bear date on or after the 28th November, 1854, should be so altered as to place them in the same relative position with the General Officers of the India Army as they held with such Officers in the rank of Colonel.

43. That the Commission of the Major-Generals to be promoted under the recommendation in paragraph 39, and of those who may hereafter be promoted, should also be ante-dated, as recommended in paragraph 42.

44. That in no case should the proposed alteration of dates carry back pay or occasion any Brevet promotion in the lower ranks; nor should the creation of 45 additional Major-Generals, as recommended in paragraph 39, cause any such promotion.

45. That on the promotion to the rank of Major-General of a Colonel of Her Majesty's Indian Army who may be junior as Colonel to any Colonel of the British Army actually serving in India, the latter should have the local rank of Major-General, with corresponding date, so as to enable him to maintain his former seniority.

46. No expense will be occasioned to Imperial funds by the adoption of the local rank of Major-General to Officers of the British Army, as recommended in the preceding paragraph.

47. Appendix E shows, in italics, how the Indian Major-Generals intersect the British Major-Generals, and the extent to which the latter have been superseded by the former.

* There is to be one General Officer for every 28 Officers. There are in the Staff Corps of the three Presidencies (Indian Army List, 1868):—

Officers		2,317
Holding Staff Appointments but not in the Staff Corps:—		
Bengal	267	
Madras	121	
Bombay	98	
	—	486
Total		2,803

48. The process of rectification which has special reference to the Cavalry and Infantry of the Line, will equally apply to the Artillery and Engineers, if supersessions have occurred in either Corps; or should any Colonel of Indian Artillery or Engineers, or of Indian Cavalry or Infantry, have been superseded by a British Colonel of any of the corresponding services respectively, such Colonel will also be entitled to rectification of date.

49. The Appendices D and E have been prepared from data obtained from Hart's Annual Army List and the Indian Army List, the dates therein and the estimated cost of the proposed promotions will, therefore, be subject to correction in the promotion branch of the War Office.

50. If, as the Committee have recommended, 45 Colonels on the British List be at once promoted and added to the establishment of Major-Generals, the following result would be obtained:—

1st. That number of the Senior Colonels will be relieved at once from supersession, including those who have been referred to by name as having held high commands and positions in the Crimea, India, and elsewhere.

2nd. The difference of rank between Colonels of the Indian List and those next or near them on the Amalgamated List, on their becoming Major-Generals, will be shortened from 12 to 9 years.

3rd. The promotion will go on with an Establishment increased by 45 Major-Generals; and when the Major-Generals of the Staff Corps come on the British List, in about three years, as before stated, then promotion will proceed at once on a total increased Establishment of 95 Major-Generals.

51. In conclusion, the Committee would desire to call the attention of the Secretary of State for War to a fact, in their opinion of great importance in the consideration of this question. The Establishment of General Officers of the British Forces is called on to provide for the Officers on the Half-pay List as well as for the Officers on Full-pay, whilst the demands on the Establishment of General Officers fixed for the Indian Officers are confined exclusively to the Colonels of the three Presidencies serving on Full-pay. The Establishment of General Officers in each service having been originally fixed on nearly the same proportion of one General to every 28 *Full-pay* Combatant Officers, no provision has been made for the drain on the British List on account of the Colonels on Half-pay. Hence, in a great degree, the disadvantage at which the Colonels of the British Army are placed; and hence, also, a strong argument in favour of the remedial temporary increase of Establishment the Committee have recommended.

(Signed) C. R. Egerton,
Deputy Adjutant-General.
W. Marvin,
War Office.
G. E. Cochrane,
For the India Office.

War Office,
5th January, 1869.

Appendix A.

My dear Mr. Grant, Horse Guards, 25th March, 1834.

I have had the honour to receive your letter of the 31st January, transmitting, in reference to my official letters of the 31st December, 1832, 19th January, 1833, and 10th January, 1834, two series of propositions, suggested with a view to overcome certain evils alleged to exist on the promotion of the higher ranks of the Company's Army—the one series purporting to emanate from the Chairman and Deputy Chairman, and to be an amendment upon the other.

Having given the whole of the matter contained in these several propositions, and in your observations upon them, my most deliberate attention, and having looked into the voluminous mass of correspondence that has taken place on the subject of the relative advantages and disadvantages of the King's and Company's officers since 1796, I now beg leave to lay before you the following as the result of my best consideration:—

The regulations which govern the promotion of officers in both Services in India have been framed, from time to time, under the joint consideration of the Court of Directors and the Commander-in-Chief for the time being; and although it has not been practicable to prevent the occurrence of some cases of individual hardship, yet every such case has been rectified, as it might best be, when duly brought forward, without any material departure from the general principles under which the promotion in both services has hitherto been governed.

There cannot be any doubt, and in every discussion upon the point it has been fully admitted

that the King's troops employed in India are an auxiliary force; but it is equally true that it is the duty of the officer entrusted with the command of the King's forces to take care that, whatever arrangement may be made for the advancement and advantage of the Company's officers, the fair claims of the officers of the King's Army are equally considered, in a just participation of all matters regarding military rank, pay, and allowances, whether in garrison or in the field.

The difficulties which have always occurred, and which now again present themselves, to any arrangement that shall give unqualified satisfaction to the officers of both Services, are to be found in the difference of principle under which the system of promotion is respectively governed in each.

In the Army of the East India Company the promotion takes place by seniority, and consequently in an army of so large a size, few, if any, officers can attain to the rank of Major-General until after a very protracted period of service in the subordinate ranks, and when they have reached an age which nearly disqualifies them for active employment; while in the King's Army, under a system of promotion wholly different, that rank has hitherto been attained after a service of less duration, and at a time of life considerably less advanced.

It was in the hopes of removing some part of this inconvenience that the whole system of promotion of both Services underwent a full reconsideration in 1828-9; and it was then agreed that every Lieutenant-Colonel of the East India Company's Service, who should at that time be Commandant of a regiment of Cavalry or Infantry, or battalion of Artillery or Engineers, should be allowed the rank of Colonel by brevet in the territorial possessions of the Company, and that every Lieutenant-Colonel who should in future be appointed Commandant of a regiment or battalion, be also promoted at the same time to the rank of Colonel in India; and in order to provide for the interests of the officers of the King's Army in India, and to take care that their fair claims should not be passed over on such particular occasions, that the local rank of Colonel by brevet should be granted to any Lieutenant-Colonel who should be superseded by a junior officer of the Company's Service, on his nomination to the command of a regiment or battalion serving in the same Presidency.

It was also provided that the officers of the Company's Army should be allowed to participate in the advantages enjoyed by the King's officers for distinguished services in the field, and this is the regulation which now obtains with respect to the points of promotion under consideration.

The very slow rate of promotion under the system of seniority, in the Company's Service, is now felt in a nearly if not an equal ratio in the King's Army, although arising from a different cause—the continuance of peace for a period of 20 years—so that the Lieutenant-Colonels date back to the year 1814, and the Majors to the same year; and it must be evident that no change of regulation could be acquiesced in by me which could have the effect either of superseding or of deteriorating the interests of the King's officers under such discouraging circumstances.

The nature of the different Services necessarily occasions a diversity in the rates of promotion of the officers of each Service respectively; and the employment of the King's Army, dispersed as it is over all parts of the world, consisting as it does of individuals of all classes and descriptions, liable as it is to perpetual variation of numbers and establishments, and to the system of promotion by purchase and sale, renders all comparison between the rates of promotion to the rank of Lieutenant-Colonel, of the officers of the King's Army, with the rate of promotion to the same rank of the officers of any other army, quite useless.

The object of every regulation on the subject of promotion, in regard to the officers of the two Armies, ought therefore to be, as it has ever been, to keep each officer in his relative position with his brother officers of both Services from this rank forwards; and it is a principle long admitted in the Military Service, and which should never on any account be departed from, that officers holding commissions of the same denominations, ought to rank according to seniority of date of that commission.

Allowing every commendation to the Army of the East India Company, to the utmost extent to which its most zealous advocates can desire, and to which that Army has upon every occasion proved itself to be justly entitled, it has never been doubted that the safety of the European dominion in India depends essentially upon the gallantry, efficiency, reputation, honour, and spirit of the European officers and troops, and particularly those in His Majesty's Service.

The Company's Army in India being in fact principals, and that of His Majesty being only auxiliaries, the officers of the Company's Army must necessarily possess many important advantages over those of the King; they naturally fill all the efficient appointments of the General Staff of the Army, and, with few exceptions, all the situations of emolument; and however brilliant may be the services of His Majesty's troops, and however necessary and indeed indispensable in every enterprise of importance, any effort to alter this relative position would only tend to establish it the more firmly, it being rooted in the nature of the political Government—in its separation from that of His Majesty, and in the nature of the service, of the language of the country, and of the climate.

But in whatever view this wide and important subject may be regarded, too much care cannot be taken to uphold, by every practicable and just measure, the spirit of the auxiliary Army, and under no possible circumstances can it ever be permitted that an officer who may have distinguished himself at the head of one of His Majesty's regiments at an important moment, should be superseded by one junior to himself in the rank of Lieutenant-Colonel, either as Colonel, or subsequently as Major-General. Such act of supersession would be quite at variance with the settlement of 1796, and wholly inconsistent with every arrangement and regulation which have been subsequently established.

As a reference has not unfrequently been made to the system of promotion by seniority of the officers of the King's Artillery and Engineers, with a view of assimilating it to the system of

seniority of promotion of the officers in the East India Company's Army, by which a Lieutenant-Colonel becomes a Colonel on succeeding to that rank regimentally, it may be useful to observe in this place, that no just comparative inference can be drawn from this consideration, for the following reasons:—

These services in the King's Army are confined exclusively to their own arm. It very rarely happens that a sufficient body of Engineers or of Artillery is employed to give occasion for the active employment of an officer of the rank of Colonel. If the body of Artillery or of Engineers is large, the nature of the service of those arms, the horses and the matériel which must be sent with that body, generally require the employment of a General Officer of those arms, and in all probability the service of such bodies of Artillery and Engineers would be with an Army with which there would be numerous General Officers of all ranks.

The supersession, therefore, by the officers of the Artillery and Engineers of the rank of Lieutenant-Colonel of those of the Army of the Line in His Majesty's Service cannot occasion frequent or even inconvenient collision, as would most undoubtedly be the case if the Lieutenant-Colonels of the King's Army in India were to be superseded by the Lieutenant-Colonels of the Company's regiments of Artillery and Engineers on their respective promotions regimentally to the command of corps.

The only safe and unerring principle on which the system of promotion can be soundly and justly regulated as between the King's and the Company's officers in India, appears to be that which has been already alluded to, that under no possible circumstances can it be permitted that a Lieutenant-Colonel in the King's Service should be superseded by one junior to himself in the rank of Lieutenant-Colonel, or Colonel, or subsequently as Major-General.

It must here be observed, that it was a direct violation of this principle that induced me to call your attention to the supersession of Colonel Thomas, of His Majesty's 20th Regiment, by Colonel Gilbert, of the Company's Service, an officer not only junior to Colonel Thomas in the Army, and superseding him in military rank, but who by such act of supersession was placed in command of the division in which the regiment of Colonel Thomas was actually serving.

As this principle appears to be the only safe rule upon which, as General Commanding-in-Chief, I can rest my conduct in the arrangement of all Regulations regarding the promotion of King's officers in India, I propose to adopt it as the foundation of the detailed discussions upon each of the propositions which you have forwarded.

There is one point in the propositions in each of the projects which must, however, be first adverted to, as it cannot be passed over without a more particular notice, and this is, that in which it is proposed to give a Colonel of the King's Army a pecuniary consideration on his being withdrawn from active duty, to avoid a collision; or, in other words, to pay him for the endurance of a military degradation. In all that has been said throughout the voluminous discussions which have taken place upon the subject of military promotions in India since 1786, the ruling principle has been to uphold the position of the King's officers, that they might not suffer in any collision of interests with the officers of the Company's Army in their character or military dignity, and thus to maintain them in the enjoyment of their full share of just and reasonable professional emoluments and advantages; but it could never be contemplated that the personal, pecuniary, and private interests of any individual should be sustained at the expense of the general and infinitely more important interests of the King's Military Service; and were this proposition to be adopted, that a Colonel of the King's Army could be withdrawn from active duty in favour of a junior Colonel in the Company's Army, and a sum of money paid to him as a compensation, the transaction could bear no other construction, in a professional sense, than that he had by such act consented to compromise the prospects of military honour and reputation for the immediate enjoyment of pecuniary advantage, and instead of tending to uphold the character of the King's officers, it must have a direct tendency to the contrary, and to deteriorate them individually and collectively in the estimation of their profession and of their country.

The proposition that such Colonel so superseded should be allowed to remain in India, until otherwise provided for, is liable also to very great objections in another point of view, inasmuch as the one act of supersession in his individual case, would be the cause of an act of injustice to the officers to whose prejudice he might hereafter be posted to a vacancy, and thus the usual and expected course of promotion, in so far, be impeded.

My object is exactly the same as that avowed by you: "To secure to the officers of each "Service their fair proportion of commands, and in so doing, to remove, in as far as may be "practicable, a fruitful source of jealousy between the two Services;" but this desirable end would not be attained by laying down any precise rule regulating the exact proportion of General Officers to each of the two Services, as such a rule would very soon be found to clash with the military rank of the claimants at each successive promotion or brevet. This end, therefore, can only be secured through the judicious and impartial conduct of the local and higher authorities, and by a close adherence to the principle laid down in the foregoing part of this letter.

With regard to the first proposition, that the General Officers of the Company's Army shall be increased to 90 from a combined list of the senior Colonels of the several Presidencies, and that their commissions shall be of the same validity, and be issued and signed in the same manner as such commissions now are, it must be observed that this measure would be in practice a partial brevet granted to the East India Company's Colonels at the expense of the Colonels of His Majesty's Army; or if it should also be intended to include those Colonels of equal rank in the King's Service, conformably to the principle above laid down, the practical effect must inevitably be, that as there would be a greater number of claimants for the same number of commands, the inconvenience now complained of by the clashing of the interests of the two Services would be increased in a proportionate ratio.

I must likewise remark that this proportion is brought forward at the moment the most unfavourable for its discussion, inasmuch as the Officers of the King's Army appear generally to entertain the apprehension that inattention to the recent recommendation of the Committee of the House of Commons upon Navy and Army Appointments, the system of periodical brevets will no longer be resorted to, and consequently that those who have not yet attained the rank of General Officer have little chance of ever reaching it.

The second proposition depending upon the decision of the first, it is not necessary to enter upon the discussion of it.

The third proposition states, "That the rank of Brigadier-General be continued to be con-"ferred, as at present, to enable the Indian Government to fill the Division Commands, &c.;" and to this there does not appear to be any objection, provided it be always understood that no supersession of a King's Officer take place, as in the case of Colonel Thomas by Colonel Gilbert, already alluded to, the military principle in all armies being that a Colonel shall not upon the same service be superseded by a junior Colonel.

Upon the fourth proposition there does not appear to be any objection, as far as the King's Officers are concerned, that the rank of Colonel should be given to all Lieutenant-Colonels in India, whenever a junior obtains that rank regimentally, but with this understanding, that when the number of Field Officers may be too small in camp or quarters, Colonels not commanding Brigades will be placed on the Field Officers' roster, adhering of course to the regulation as it now stands, that all King's Lieutenant-Colonels so superseded should receive the brevet of Colonel.

The fifth and sixth propositions, containing the arrangements for the compensation of the Colonels of the King's Service who may happen to be superseded by the effect of any regulation, having been already admitted to, it is unnecessary to say more than that I could not, upon any view of the matter, concur in them.

The seventh proposition, that the number of Brigadier Commands to be held by His Majesty's and the Company's Officers respectively, be in the proportion of one of His Majesty's to four of the Company's, does not appear objectionable, being considered in proportion to the relative strength of the two Armies.

In so far as the King's Officers are concerned, there does not appear to be any objection to the eighth proposition of the Chair:—"That local Colonel's commissions be granted to all Lieu-"tenant-Colonels, whether of the King's or the Company's Service, whose commissions as "Lieutenant-Colonel are of anterior date to the Lieutenant-Colonel's commissions of officers who "have succeeded to regiments under the present system, and that officers of the rank of Colonel, "who have obtained regiments, shall have such an anterior revised date of commission of Colonel "as will place them in the correct relative seniority which they previously held as Lieutenant-"Colonels."

The rank of Colonel granted to a King's Aide-de-camp is permanent Army rank, and entitles him to the advantages belonging to that rank, for all military purposes, wherever he may be employed, according to the date of his commission as Colonel, and the number of Colonels of this description forming so very small a proportion as compared with the whole number of Colonels, that it is not probable that any inconvenience can be found from interference on their part in India.

Having now, I believe, touched upon every material point contained in your letter, and enclosures, I will at once conclude with the expression of my regret, that I have been under the unavoidable necessity of occupying so much of your valuable time and attention.

I have, &c.,
(Signed) HILL.

The Right Hon. Charles Grant.

APPENDIX B.

Sir, Head-Quarters, Simla, 13 August, 1865.

I HAVE the honour, with much deference, to solicit the attention of His Royal Highness the Field-Marshal Commanding-in-Chief, to some very important considerations affecting the position of the superior officers of Her Majesty's British forces. Thus, under the operation of the rules of promotion in the several services, the following full Colonels of the British Army now serving in India, viz.:—Colonel T. Williams, C.B.,* 4th Foot; Colonel D. Rainier, 98th Foot; Colonel E. A. Holdich, C.B., 20th Foot; Colonel A. C. Errington, 51st Foot; Colonel S. T. Christie, C.B., 80th Foot; Colonel E. Haythorne, 1st Foot, have been superseded in India by the promotion to the rank of General Officer of Colonels in the local service. †

* Appointed Major-General, with temporary rank, February 1865.

† Colonel T. Williams has been superseded by all Major-Generals on the Indian List between Sir W. Coghlan. and Major-General J. E. Landers, viz., 13, including Major-Generals Showers, C.B., McLeod, and Troup, C.B., Commanding Divisions.

Colonel Rainier, 98th, by all below Major-General Lang, viz., 17, including the above-mentioned Officers Commanding Divisions.

Colonel Holdich, 20th, by all below Major-General Showers, viz., 16, including Major-Generals McLeod and Troup, Commanding Divisions.

Colonel Errington, 51st, by all below Major-General Welchman, viz., 12.

Colonel Christie, 80th, by all below Major General Welchman, viz., 12.

Colonel E. Haythorne, Adjutant-General, by all below Major-General Landers, viz., 6.

2. It is seen that all the Colonels on the Local Lists in India of the year 1856 are now promoted to the effective rank of Major-General.

3. According to the averages of promotion in the British Army, the Colonels of 1854 will probably not have been absorbed in the rank of Major-General till the year 1868.

4. The supersession of the Colonels belonging to Her Majesty's British forces by the Indian local Colonels cannot fail to go on at an accelerated ratio for the following reasons, viz.: that the number of Colonels on the British Lists is immeasurably greater than that in the local Indian Lists, in proportion to the number of General Officers respectively borne on the two establishments. Thus the number of Generals of the different degrees is 272, in the British Service; the number of Colonels, by June Army List, is 394; the number of Generals on the Local List is 208; the number of Colonels, by the last Bengal Army List, is 123.

5. It has always been believed that the inequality to which attention has been invited, was in former times forbidden, under the orders of His late Majesty King William IV.

6. For some years the practice obtained of promoting all officers to the local rank of Major-General in India, who were immediately senior to officers of the Indian Service, who had been promoted by the Queen's Brevet.

7. In 1854, a new system of promotion was established, the old General Brevet being abolished. After some correspondence, it was ruled by the late Lord Hardinge, when Commanding-in-Chief in England, that, as a consequence of the new system of promotion, the practice above alluded to, known under the name of Fane promotion of Major-Generals, should no longer be permitted to exist.

8. Appeals against supersession have from time to time been made by Colonels of the British Service serving in India, which have been set aside under the ruling above quoted.

9. The question might therefore be allowed to rest, but for the fact that lately the Right Honourable the Secretary of State for India has, with regard to all other ranks, declared the very principle on the assertion of which the quondam promotion of Fane Major-Generals rested; and, secondly, the frequent supersession of British Colonels which is now proceeding.

10. Thus it is now seen (*vide* Secretary of State's Despatch, D/ 17th June, 1864) that Lieutenant-Colonels, Majors, Captains, and Lieutenants, are promoted in the local Gazettes in India, to put them on a par in India with officers who obtained rank under the Staff Corps Warrant.

11. This having thus been practically asserted, with officers of inferior degree, the inquiry is now made by the old Colonels serving in India, whether the like principle should not also be applied in the case of Line Colonels who have been superseded by Major-Generals of the Indian Service.

12. The argument against this is, that the Indian Service is not the only one which presents a separate list of promotion, entailing such effects. Thus it is maintained that the Royal Artillery and Royal Marines being on separate Lists, occasional supersession of the Infantry and Cavalry Colonels takes place with regard to those branches of the Service, and *vice versâ*.

13. It is then argued that, if it be not objected to in those cases, there can be no reason for making an attempt to set aside the inequality in the case of the Indian officers.

14. In the first place, it may be observed, in answer to this argument, that it was always understood in the Army at large that it had been distinctly stipulated, when the rank of General was granted to the Indian officers, that the concession should not in any manner prejudice the condition of officers of like standing belonging to the Royal Army.

15. But, secondly, there is a further reason the analogy suggested by the Royal Artillery and Royal Marine Services does not stand the test of examination. The officers of those branches of the Service do not generally come into contact with Cavalry and Infantry officers.

16. Out of India, the ordinary divisional and brigade commands do not fall to them, whether in war or in time of peace.

17. In India, on the other hand, the Indian Major-Generals, who are now superseding the Colonels of the British Army in considerable numbers, will most assuredly take command of the latter as Generals of Divisions in the several Indian Presidencies, the very result being thus produced, against which, as we know, it was deemed formerly necessary to guard.

18. With respect, then, to the principle adopted for other ranks, I would venture to intimate for the general consideration of His Royal Highness, that no good reason can be assigned for making exception with regard to the particular rank of Major-General.

19. It has apeared to me, therefore, the subject would seem to me to be one which may be, with propriety, referred for the consideration of His Royal Highness and of the Right Honourable the Secretaries of State for India and War, with a view to the application of the old rule, by which the local rank of Major-General is given to officers having the rank of Colonel, who are superseded by the promotion of officers of the local armies of Bengal, Madras, and Bombay.

20. Supposing the old rule to be re-established, as above suggested, it would appear necessary, with regard to the Indian Service, on the other hand, that if that were to occur, which is apparently impossible from the constitution of the lists of the several armies, viz., the case of a Line Colonel being promoted in the ordinary course to the rank of Major-General, who might be junior to an Indian Colonel, the latter should be promoted locally in India to the rank of Major-General, in order to preserve perfect uniformity and equality between the two Services.

21. It is to be remarked that the rank of Major-General being conferred on Indian officers, not only for India, but for all the world, by the late changes, the state of things to which notice has been attracted is even more serious for the officers of the British Army than was originally contemplated when the remedy above alluded to was applied.

22. It may perhaps be assumed that, in practice generally, the two sets of officers would not come into contact, except in India.

23. The experience of the war of 1855–56 does, however, lead us to believe that in any development of the military resources of Great Britain for European war, this contingency would in all probability take place.

24. The argument contained in this letter would be hardly complete were I to omit to draw the attention of His Royal Highness to another general result of the constitution of the Lists of Indian Field Officers.

25. Thus, owing to the number of Colonels, Lieutenant-Colonels, and Majors being proportionately less to the General Officers as compared with the like ranks in the British Army List, an officer in the former, having been promoted to the rank of Field Officer, runs through the several ranks more rapidly than an officer in the British Service till the rank of General is reached.

26. Officers who became Brevet Majors in 1858 are now Lieutenant-Colonels in ordinary succession in the India Lists.

27. According to the last Royal Annual Army List, it is apparent that there are great numbers of Majors of 1855.

I have, &c.,
(Signed) W. R. MANSFIELD, General,
Commander-in-Chief in India.

P.S.—I would more especially invite your attention to the very important correspondence which took place on the matter of this letter during the command-in-chief of the late Lord Hill. The letter which more particularly lays down principles and rules is that from his Lordship to the President of the Board of Control, dated 25th March, 1834, in which the relative position of the King's Officers and those of the late Honourable East India Company is discussed in the most masterly manner; subsequent to the writing of that letter, took place the correspondence between the late Sir Henry Fane and the Government of India, which resulted in the conferring of the local rank of Major-General on such officers of the King's Service as had been superseded by those of the Honourable Company. I gather that copies of that correspondence must be in existence in your office, and I therefore abstain from sending copies, unless you should wish me to do so.

(Signed) W. R. MANSFIELD.

The Military Secretary,
Horse Guards, London, S.W.

APPENDIX C.

LIST of Colonels of the British Forces serving in *India*, who have been superseded in the Rank of Major-General by their Juniors of the Indian Forces.

Name.	Corps.	Date of Rank as Colonel.	How Employed.
		1858.	
Goodwyn	41st Foot	19th March ..	Commanding Brigade, Bengal.
Maxwell, G. V.	88th „	23rd „ ..	„ „ „
Macdonell	3rd Rifle Brigade ..	20th July ..	„ „ „
Raines	95th Foot	20th „ ..	„ „ Bombay.
Fenwick	10th „	26th „ ..	„ „ Madras.
Wyatt	11th „	26th October ..	Commanding Regiment, Bengal.
		1859.	
Turner	Unattached ..	26th April ..	Commanding Brigade.
Longden	„	26th „ ..	Adjutant-General.
		1860.	
Forrest	Unattached ..	8th March ..	Commanding Brigade, Bengal.
Gordon	91st Foot	31st August ..	Commanding Regiment, Madras.
Stanners	20th Hussars ..	18th November	Commanding Brigade, Bengal.
		1861.	
Pratt	23rd Foot	23rd January ..	Commanding Brigade, Bombay.
McMahon	36th „	4th May ..	Commanding Regiment, Bengal.
Maxwell, G. H.	88th „	11th June ..	„ „ „
		1862.	
Addison	2nd Foot	16th February ..	Commanding Regiment, Bombay.
Bright	19th „	1st May ..	„ „ Bengal.
Watson	82nd „	21st July ..	„ „ Bombay.
Glynn	3rd Rifle Brigade ..	29th October ..	„ „ Bengal.

Commanding Brigades	9
Commanding Regiments	8
Adjutant-General, Bengal	1
Total	18

APPENDIX D.

LIST of Forty-five Colonels for Promotion to the Rank of Major-General, and the cost of such Promotion.

Regimental Rank.	Names.	Whether on Full or Half-Pay.	Rate of Half-pay in each rank.	Difference between Half-pay and Pay of Major-General.	Total Cost.
			s. d.	s. d.	£ s. d.
Major	Prince of Saxe Weimar	Grenadier Guards	—	—	1 5 0
Lieut.-Colonel	Sir E. R. Wetherall ..	Unattached	11 0	14 0	0 14 0
,, ..	A. Little	H. p., 9th Lancers ..	12 6	12 6	0 12 6
,, ..	J. Douglas	H. p., Depôt Battalion ..	11 0	14 0	0 14 0
,, ..	Sir J. Douglas	Unattached	11 0	14 0	0 14 0
,, ..	H. C. B. Daubeney ..	H. p., 71st Foot	11 0	14 0	0 14 0
Major	Hon. R. W. P. Curzon..	H. p., Grenadier Guards ..	11 0	14 0	0 14 0
Lieut.-Colonel ..	T. Tapp	103rd Foot	—	—	1 5 0
,, ..	Sir T. W. M'Mahon ..	H. p., 5th Dragoon Guards	12 6	12 6	0 12 6
,, ..	A. Maxwell	H. p., 46th Foot	11 0	14 0	0 14 0
,, ..	R. T. Farren	Depôt Battalion	11 0	14 0	0 14 0
,, ..	R. Wardlaw	H. p., 1st Dragoons ..	12 6	12 6	0 12 6
,, ..	J. T. Grant	H. p., 18th Foot	11 0	14 0	0 14 0
,, ..	A. Low	H. p., Partr. Service ..	11 0	14 0	0 14 0
,, ..	P. Hill	H. p., Rifle Brigade ..	11 0	14 0	0 14 0
,, ..	Sir E. H. Greathed	Unattached	11 0	14 0	0 14 0
,, ..	Sir J. Jones	I. F. O.	11 0	14 0	0 14 0
,, ..	W. N. Custance ..	H. p., Cavalry Depôt ..	12 6	12 6	0 12 6
,, ..	A. C. Bentinck	I. F. O.	11 0	14 0	0 14 0
,, ..	Sir R. D. Kelly.. ..	H. p., 34th Foot	11 0	14 0	0 14 0
,, ..	J. R. Stuart	H. p., 21st Foot	11 0	14 0	0 14 0
,, ..	Hon. R. Rollo	Unattached	11 0	14 0	0 14 0
Major	E. H. F. Pocklington ..	H. p., 52nd Foot	11 0	14 0	0 14 0
Lieut.-Colonel ..	Sir C. W. D. Staveley ..	H. p., 44th Foot	11 0	14 0	0 14 0
,, ..	H. T. Warre	H. p., 57th Foot	11 0	14 0	0 14 0
,, ..	J. E. Goodwyn	41st Foot	11 0	14 0	0 14 0
,, ..	R. De Salis	H. p., 8th Hussars ..	12 6	12 6	0 12 6
,, ..	A. T. Hayland	H. p., 56th Foot	11 0	14 0	0 14 0
,, ..	G. V. Maxwell	88th Foot	11 0	14 0	0 14 0
Major	E. S. Smith	Unattached	11 0	14 0	0 14 0
Lieut.-Colonel..	E. R. Jeffreys	Depôt Battalion	11 0	14 0	0 14 0
Major	Hon. F. Colborne ..	H. p., 6th Foot	11 0	14 0	0 14 0
Lieut.-Colonel..	Hon. Sir G. G. Foley ..	H. p., 44th Foot	11 0	14 0	0 14 0
,, ..	C. R. Egerton	H. p., Depôt Battalion ..	11 0	14 0	0 14 0
,, ..	E. Elmhirst	H. p., Depôt Battalion ..	11 0	14 0	0 14 0
,, ..	R. C. H. Taylor ..	I. F. O.	11 0	14 0	0 14 0
,, ..	R. N. Tinley	H. p., Cape Rifles.. ..	11 0	14 0	0 14 0
,, ..	E. A. Somerset.. ..	Unattached	11 0	14 0	0 14 0
,, ..	A. C. Goodenough ..	H. p., Depôt Battalion ..	11 0	14 0	0 14 0
,, ..	P. L. McDougall ..	H. p., Canadian Rifles ..	11 0	14 0	0 14 0
,, ..	A. MacDonell	Seconded Rifle Brigade ..	11 0	14 0	0 14 0
,, ..	J. A. R. Raines ..	,, 95th Foot ..	11 0	14 0	0 14 0
,, ..	W. Fenwick	,, 10th ,, ..	11 0	14 0	0 14 0
,, ..	J. A. Street	H. p., Depôt Battalion ..	11 0	14 0	0 14 0
,, ..	C. Herbert	Retired, 54th Foot ..	11 0	14 0	0 14 0
	Total per Diem ..	.. ..	..	..	32 4 6
	Total per Annum ..	.. ..	..	..	11,762 2 6

APPENDIX E.

COMBINED LIST of the MAJOR-GENERALS of the British and Indian Armies, showing the Date each Officer was Promoted to the Rank of Colonel, and to the Rank of Major-General, from the date of the Amalgamation Warrant:—viz., 1st January, 1862.

NAMES. (British Officers in Roman Letters, Indian in *Italics*.)	Date of Promotion to Colonel.	Date of Promotion to Major-General.
Willoughby Trevelyan, Bombay Cavalry	28 *Nov.* 1854	1 *Jan.* 1862.
Francis Rowcroft, C.B., *Bengal Infantry*	28 " "	1 " "
Edward Rowley Hill	28 " "	2 Feb. "
George William Key	28 " "	6 " "
Edward Pole	28 " "	16 " "
Frederick Holt Robe, C.B.	28 " "	14 March "
Sir Robert Walpole	28 " "	30 May "
A. J. Lawrence	28 " "	1 June "
Honourable George Cadogan	28 " "	3 " "
Hugh Troup, Bengal Infantry	28 " "	10 " "
G. J. Jameson, Bombay Infantry	28 " "	15 " "
J. C. H. Gisbone	28 " "	28 " "
W. M. Ramsay, Bengal Infantry	28 " "	1 *July* "
C. P. Ainslie	28 " "	7 " "
H. Lyson, Bombay Infantry	28 " "	16 " "
Sir Archibald Bogle, Kt., Bengal Infantry	28 " "	2 *Aug.* "
Freeman Murray	28 " "	13 " "
Honourable Alexander Nelson Hood	28 " "	19 " "
David Russell	28 " "	3 Sept. "
Richard A. Bayly, Bombay Infantry	28 " "	6 " "
A. M. Burmester	3 Sept. 1862	23 " "
David Simpson, Bengal Infantry	28 *Nov.* 1854	2 *Oct.* "
Horatio Shirley	28 " "	24 " "
William Samuel Newton	28 " "	6 Nov. "
George Dixon	28 " "	7 " "
Egerton C. W. W. Milman	28 " "	9 " "
Spencer Perceval	28 " "	9 " "
Henry Cooper	28 " "	9 " "
Randal Rumley	28 " "	9 " "
Right Honourable Sir Henry Storks	28 " "	12 " "
Edward Altham Cumberlege, Bengal Infantry	28 " "	22 " "
John Macdonald, Bengal Infantry	28 " "	12 *Dec.* "
Thomas Charlton Smith	28 " "	21 " "
Honourable George C. W. Forester	28 " "	29 Jan. 1863.
Edward Cooper Hodge, C.B.	28 " "	30 " "
Thomas Crombie	28 " "	5 Feb. "
Henry Edward Doherty	28 " "	8 " "
Augustus Halifax Ferryman	28 " "	12 " "
William John Ridley, Scots Fusilier Guards	28 " "	13 " "
William Raikes Faber	28 " "	9 March "
Sir Charles S. Stuart, Bombay Infantry	28 " "	12 " "
T. H. Shuldham, Bengal Infantry	28 " "	18 " "
T. J. Galloway	28 " "	27 " "
Sir John Garvock	28 " "	1 April "
William Jones	28 " "	1 " "
John Butler, Bengal Infantry	28 " "	3 " "
George Binney	28 " "	17 " "
Honourable A. H. Gordon	28 " "	8 June "
James Houghton, Bombay Infantry	28 " "	10 " "
William Lang	28 " "	29 " "
Corbet Cotton	28 " "	6 July "
Mathew Smith	28 " "	9 Sept. "
Henry Bates	28 " "	9 Oct. "
Thomas Maitland Wilson	28 " "	7 Jan. 1864.
George Staunton	28 " "	12 " "
W. C. M'Leod, Madras Infantry	28 " "	18 " "
Charles Crutchley	28 " "	31 " "
Walter Hamilton	28 " "	3 Feb. "
Charles Rochfort Scott	28 " "	21 " "
Mark Kerr Atherley	28 " "	12 March "
Sir T. Chute	28 " "	9 April "

Appendix E.—*continued.*

Names. (British Officers in Roman Letters, Indian in *Italics*.)	Date of Promotion to Colonel.	Date of Promotion to Major-General.
W. Gust Brown	28 Nov. 1854	29 April 1864
Henry Jervis	28 „ „	17 May „
Colin Troup, Bengal Infantry	28 „ „	26 „ „
G. A. Baillie, Madras Infantry	28 „ „	28 „ „
J. Welshman, Bengal Infantry	28 „ „	25 *June* „
Michael William Smith	28 „ „	4 July „
Sir N. B. Chamberlain	28 „ „	5 *Aug.* „
John Maxwell Perceval	28 „ „	8 „ „
Henry William Stisted	28 „ „	10 „ „
David Babington, Madras Infantry	28 „ „	17 „ „
P. M. N. Guy	28 „ „	9 Sept. „
Francis Seymour	28 „ „	10 „ „
Charles Steuart	28 „ „	3 Oct. „
F. R. A. Freeman, Madras Infantry	28 „ „	21 „ „
John Leslie Denis	28 „ „	28 „ „
C. R. Sackvill, Lord West	28 „ „	29 „ „
F. P. Haines	28 „ „	25 „ „
W. Radcliffe	28 „ „	9 Dec. „
John Arthur Lambert	28 „ „	27 „ „
William Ferguson Beatson, Bengal Infantry	28 „ „	8 *Jan.* „
William O'Grady Haly	28 „ „	12 „ „
H. P. Raymond	28 „ „	6 Feb. „
Lord H. H. M. Percy	28 „ „	10 „ „
W. C. E. Napier	28 „ „	9 March „
J. E. Landers, Bengal Infantry	28 „ „	12 „ „
C. H. Ellice	28 „ „	23 „ „
E. R. Mainwaring, Bengal Staff Corps	7 *May* 1855	23 *March* 1865
H. R. Jones	28 Nov. 1854	2 April „
Auchmuty Tucker, Bengal Staff Corps	2 *April* 1856	9 „ „
Sir T. Biddulph	28 Nov. 1854	31 May „
P. Harris, Bengal Staff Corps	8 *June* 1856	13 *June* „
James Travers, Bengal Infantry	6 *Dec.* „	23 *July* „
Charles Hagart	28 Nov. 1854	28 „ „
Thomas M. Steele	28 „ „	17 Aug. „
John Liptrap, Bengal Infantry	20 *June* 1857	22 „ „
William Chambre	28 Nov. 1854	28 „ „
Honourable A. C. Legge	28 „ „	28 „ „
M. Dalyell	28 „ „	28 „ „
James Creagh	28 „ „	28 „ „
H. S. Stephens	28 „ „	31 „ „
J. M'Queen	28 „ „	5 „ „
Charles Smith	28 „ „	5 „ „
Edgar Gibson	28 „ „	5 „ „
Edward Last	28 „ „	5 „ „
Francis Plunkett Dunne	28 „ „	26 Sept. „
Randon J. P. Vassal	28 „ „	26 „ „
J. P. Sparks	28 „ „	26 „ „
Hubert Marshal, Madras Infantry	20 *June* 1857	9 *Oct.* „
John Liddel, Bombay Infantry	20 „ „	20 „ „
R. Chetwode	28 Nov. 1854	24 „ „
J. P. Westropp	28 „ „	24 „ „
Edward Darnell, Madras Staff Corps	20 *June* 1857	20 *Nov.* „
E. C. Fletcher	28 Nov. 1854	12 Jan. 1866
James Scargill	28 „ „	12 „ „
Robert Lewin	28 „ „	12 „ „
Samuel Tryon	28 „ „	14 „ „
Thomas Williams	28 „ „	14 „ „
Richard Wilbraham	28 „ „	26 „ „
H. Palmer, Bengal Staff Corps	29 *July* 1857	7 *Feb.* „
David Pott	22 *Aug.* „	15 „ „
William Irvin	28 Nov. 1854	3 March „
Frank Adams	28 „ „	4 „ „
J. R. Brunker	28 „ „	10 „ „
H. D. Griffiths	28 „ „	31 „ „
J. Webber Smith	28 „ „	20 April „
L. S. O'Connor	28 „ „	24 „ „
F. D. George	28 „ „	6 May „
P. T. Cherry, Madras Cavalry	23 *Nov.* 1857	27 „ „
John Yorke	28 Nov. 1854	17 June „
H. D. O'Halloran	28 „ „	19 „ „
H. R. H. Frederick of Schleswig-Holstein	— —	3 July „

Appendix E—*continued.*

Names. (British Officers in Roman Letters, Indian in *Italics.*)	Date of Promotion to Colonel.	Date of Promotion to Major-General.
P. K. McSkinner, Bombay Staff Corps	28 *Nov.* 1857	23 *July* 1866.
W. E. Mulcaster, Bengal Staff Corps	28 „ „	26 „ „
Orfeur Cavenagh, Bengal Staff Corps	28 „ „	17 *Sept.* „
J. H. E. Dalrymple	28 Nov. 1854	28 Oct. „
J. S. Paton, Bengal Staff Corps	28 „ 1857	29 „ „
H. J. Pelly, Bombay	1 *Dec.* „	6 *Nov.* „
J. M. B. F. Tyler, Bengal Staff Corps	19 *Jan.* 1858	13 „ „
R. R. Younghusband, Bombay Staff Corps	2 *March* „	6 *Dec.* „
H. H. Graham	28 Nov. 1854	20 Jan. 1867.
J. D. Macpherson, Bengal Infantry	5 *April* 1858	28 „ „
H. Renny	28 Nov. 1854	2 Feb. „
G. Campbell	28 „ „	4 „ „
R. Shubrick, Madras Infantry	18 *June* 1858	12 „ „
R. N. Faunce, Madras Staff Corps	20 *July* „	26 „ „
J. J. Bisset	28 Nov. 1854	8 March „
J. W. Bayley, Madras Staff Corps	14 *Oct.* 1858	13 „ „
C. Reid	26 *April* 1859	5 *April* „
W. B. Wemyss, Bengal Cavalry	20 *July* „	3 July „
J. Armstrong	28 Nov. 1854	5 „ „
E. A. Holdrich	28 „ „	3 Sept. „
R. N. Phillips	28 „ „	8 Dec. „
G. P. Wish, Bombay Staff Corps	2 *June* 1860	9 „ „
G. Malcolm, Bombay Infantry	31 *Aug.* „	15 „ „
Sir A. H. Horsford	28 Nov. 1854	1 Jan. „
W. D. P. Patton	28 „ „	1 „ „
G. J. Carey	28 „ „	21 „ „
Honourable P. E. Herbert	28 „ „	28 „ „
E. L. Russell, Bombay Infantry	7 *Oct.* 1860	30 „ „
Arthur Bolton	28 Nov. 1854	31 „ „
Sir H. B. Edwardes, Bengal Infantry	18 *Oct.* 1860	6 *Feb.* „
D. E Mackirdy	28 Nov. 1854	21 „ „
H. F. Durnford, Bengal Infantry	18 *Dec.* 1860	22 „ „
C. Birdwood, Bombay Infantry	9 *April* 1861	6 *March* „
G. W. Bishop, Bengal Infantry	2 *Nov.* „	6 „ „
G. Ramsay, Bengal Staff Corps	1 *Jan.* 1862	6 „ „
H. Pritchard, Madras Staff Corps	1 „ „	6 „ „
H. W. Matthews, Bengal Infantry	1 „ „	6 „ „
C. T. Chamberlain, Bengal Staff Corps	14 *April* 1862	6 „ „
J. D. Stewart, Bombay Infantry	20 „ „	6 „ „
C. B. Prior, Bengal	10 *June* „	6 „ „
H. B. Lumsden, Bengal Staff Corps	15 „ „	6 „ „
G. De Sausmarez, Madras Infantry	16 *July* „	6 „ „
J. S. Brownrigg	28 Nov. 1854	13 March „
W. M. S. McMurdo	28 „ „	27 „ „
W. Munro	28 „ „	29 „ „
A. C. Errington	28 „ „	9 April „
F. W. Burrough, Bengal Infantry	5 *Oct.* 1862	9 „ „
C. A. Edwards	28 Nov. 1854	19 „ „
S. T. Christie	28 „ „	21 „ „
W. K. Babington, Madras Infantry	12 *Dec.* 1862	22 „ „
W. M. Wood	24 Nov. 1854	1 May „
H. Smyth	28 „ „	9 „ „
S. Briggs, Madras Staff Corps	6 *Jan.* 1863	28 *June* „
Lord Mark Kerr	28 Nov. 1854	12 July „
H. W. Whitfield	28 „ „	13 Aug. „
L. S. Hough, Bombay Staff Corps	19 *Jan.* 1863	16 „ „
John Wilkie	28 Nov. 1854	25 „ „
H. P. de Bathe	28 „ „	29 „ „
H. W. Blake, Madras Infantry	12 *March* 1863	19 *Oct.* „
R. G. Taylor, Bengal Staff Corps	3 *April* „	28 „ „
W. F. Nuthall, Bengal Infantry	21 „ „	9 *Nov.* „
R. Waddy	28 Nov. 1854	10 „ „
M. Galwey, Madras Infantry	9 *May* 1863	18 „ „
Thomas H. Tidy	28 Nov. 1854	22 „ „
Edmund Haythorne	28 „ „	23 „ „
Thomas Brooke	28 „ „	28 „ „
H. Dalrymple White	28 „ „	2 Dec. „
W. S. R. Norcott	29 June 1855	10 „ „
Daniel Lysons	17 July „	27 „ „
W. L., Earl of Longford	17 „ „	31 „ „

Appendix F.

Memorandum by the Duke of Wellington, dated 18th September, 1827.

It appears that previous to the year 1806, the practice prevailed of promoting Officers of the East India Company's Army of the rank of Lieutenant-Colonel to be Colonel of a regiment, and to grant such Officer His Majesty's commission of Colonel on the day of his promotion to be a Colonel of a regiment, thus superseding all the Lieutenant-Colonels of His Majesty's regiments serving in India, as well as those of the Service of the East India Company, who might be senior to the Lieutenant-Colonel of the East India Company's Service so promoted.

This practice was complained of, if I am not mistaken, first by the Officers in the Service of the East India Company in relation to the promotion of the Lieutenant-Colonels of Cavalry to be Colonels of regiments of Cavalry, over the heads of their seniors of other branches of the Service, and of the promotion of the Lieutenant-Colonels of regiments, generally of one establishment, to be Colonels of regiments on that establishment over the heads of their seniors on other establishments, and not by the Officers of His Majesty's regiments till afterwards, if at all.

Indeed I have reason to doubt that the subject was ever complained of by His Majesty's Officers, and I believe that the Regulation of 1806 was founded exclusively upon the complaints of the Officers of the Service of the East India Company of the operation of the letter of the Regulation of 1796 upon the Service of the East India Company.

It is now discovered, however, that the Regulation of 1806, although strictly in conformity with the spirit of the Regulation of 1796, operated injuriously, not so much to the private interests of Officers but to the Service itself, and an anonymous writer has supplied the arguments by which that Regulation is to be overturned.

I admit the truth of all the reasoning upon which the Regulation of 1796 was founded. By this admission I do not intend to pronounce any unqualified approbation of all the details of that Regulation, but I approve of the principle that men holding commissions of the same denomination should rank with each other according to the dates of their several appointments.

The nature of different services necessarily occasions a diversity in the rates of promotion of the Officers of such service respectively; and the anomalous nature of the service of the King's Army, scattered as it is in all parts of the habitable globe, consisting as it does of persons of all classes and descriptions, liable as it is to perpetual variations of numbers and establishments, and the establishment in it of promotion by purchase, of sale to and purchase from half-pay, render all comparison between the rates of promotion to the rank of Lieutenant-Colonel of the Officers of the King's Army with the rate of promotion to the same rank of the Officers of any other Army quite useless.

I would here observe that the Officers of the East India Company's Armies attain the rank of Lieutenant-Colonel after very different periods of service in each of the three Presidencies, and in the three arms in each Presidency, and after very different periods of service at different times. The inequality in the relative rate of promotion to the rank of Lieutenant-Colonel is not therefore confined to the relation of the East India Company's to the King's Army.

From the rank of Lieutenant-Colonel an Officer of the King's Army advances only by rotation, with very trifling exceptions not worthy of discussion in such a paper as this; and the object of the Regulation ought to be to keep each Officer in his relative position with his brother Officers of both Services from this rank forward.

Having commenced by laying down as a principle, that Officers holding commissions of the same denominations ought to rank according to seniority of date of that Commission, having ever manifested the utmost confidence in the native troops of India and in their Officers, I may venture in a paper of this description to say that the safety of the dominion in India depends essentially upon the gallantry, efficiency, reputation, honour, and spirit of the European Officers and troops, and particularly of those in His Majesty's Service.

The Officers in the service of the East India Company have many advantages. They must fill all the efficient situations on the General Staff of the Army, and with few exceptions all the situations of emolument.

The Company's Army in the East Indies are in fact principals, and that of His Majesty only auxiliary, however brilliant the service of His Majesty's troops, and however necessary in every enterprize of importance, and every effort to alter this relation only tends to establish it more firmly. It is founded in the nature of the Political Government in its separation from that of His Majesty's, and in the nature of the service, of the language of the country, and of the climate. But it will not answer to lower the spirit of this Auxiliary Army. An Officer who has distinguished himself at the head of one of His Majesty's regiments, and who may thereby have rendered essential service at an important moment, must not be liable to be superseded by one junior to himself in the rank of Lieutenant-Colonel, either as Colonel, or subsequently as a Major-General. Such supersession would be quite inconsistent with the spirit of the settlement of 1796, and with the letter of that of 1806, called for as it was by the Officers of the East India Company's Army, and not by that of the King.

The anonymous writer refers to the state of the promotion of the Corps of Royal Artillery and Engineers under the Ordnance; and because the Lieutenant-Colonels of these corps are promoted regimentally to the rank of Colonel as vacancies occur in these corps respectively, without reference to their relative position in the General Army List, he contends that the same measure of promotion ought to be adopted in each of the Armies under the three Presidencies in India.

The anonymous writer, however, is not possibly aware, and at all events has not mentioned that the Officers of the Artillery and Engineers are prevented by custom, if not by positive Regulation from being employed in the General Command of His Majesty's troops.

Their services are confined exclusively to their own arm. It happens but seldom that a sufficient body of Engineers or Artillery is employed to give occasion for the active employment of an Officer of the rank of Colonel. If the body of Artillery or of Engineers is large, the nature of the service of those arms, the horses, and the material which must be sent with such body, generally require the employment of a General Officer of those arms; and in all probability the service of such bodies of Artillery and Engineers would be with an Army with which there would be General Officers of all ranks.

These supersessions then of the Officers of the Artillery and Engineers of the rank of Lieutenant-Colonel, of those of the Army of the Line cannot occasion daily collisions, as must the supersessions of the Lieutenant-Colonels of the King's regiments in India, by the Lieutenant-Colonels of the Company's regiments, of the same arm, promoted to be Colonels of regiments.

The fact stated by the anonymous writer does not apply to the case, and the reasoning founded upon it is fallacious.

The next point to be considered is the proposal of the President of the Board of Control, viz., that a Brevet of Colonel should be granted by His Majesty to every Lieutenant-Colonel, whether of the King's Service in India or of the Company's Service, after 10 years' service as Lieutenant-Colonels.

The effect of this Brevet would be to promote permanently the Lieutenant-Colonel in the Company's Service, that is to say a Lieutenant-Colonel of the year 1817 would be a Colonel in the Service of the East India Company, and of His Majesty in the year 1827, and he would hereafter be made a Major-General in His Majesty's Service, in the same year with the Officers of His Majesty's Service promoted to be Colonels in the year 1827.

The Lieutenant-Colonel of His Majesty's Service of the year 1817, would equally be made a Colonel in the year 1827; but not in His Majesty's Service generally. His Brevet of Colonel would be applicable to India only, and he would be promoted to a Major-General in His Majesty's Service only, when those Officers should be promoted to that rank, whose Commissions of Lieutenant-Colonel would bear the same date as his of Lieutenant-Colonel.

It may be stated that this Officer would probably not be in India when the supersession in the rank of Major-General would take place, and if he were, His Majesty would have it in his power to apply a remedy.

It must be observed that this remedy must be of the nature of a Local Brevet given to a particular individual which it has been the object of all the Regulations to avoid.

This is not all: the Lieutenant-Colonels of the King's Army first for promotion are those of the year 1812. The plan of the President of the Board of Control would give those serving in India an advance over them of from one to five years.

Every regiment sent to India hereafter in the progress of the relief of the Army in that part of the world, must have its Lieutenant-Colonel promoted accordingly; and I need not point out the expense of this arrangement. It has already been stated that the advance of five years in the promotion of the Lieutenant-Colonels of the East India Company's Army will give them an advance of five years in the promotion to be Major-Generals.

They will be made Major-Generals at the same time with Lieutenant-Colonels of the King's Service of the year 1812.

What is to become of the Lieutenant-Colonels of the King's Service promoted henceforward to be Colonels, *now* bearing commissions of Lieutenant-Colonel of a date prior to 1817? Are they to have their commissions of Colonel antedated when sent to service in India?

Are they likewise to be promoted to be Major-General in India only at the same time with the Officers of the East India Company's Service of the same date of rank, and to be re-called from the command of their regiments when still able to exercise that command with advantage to the public? or are they to be employed with their regiments with the Brevet rank of Colonel, their juniors of the East India Company's Service of the rank of Lieutenant-Colonel, from which all ought to start fairly, according to the spirit of the arrangement of the Regulation of 1796, and according to the letter of that of 1806, serving in the same Army as Major-Generals?

I am certain that the President of the Board of Control will see, that whatever may be the necessity for increasing the number of Colonels and Major-Generals in the East India Company's Army, the scheme will not work better than that proposed by the anonymous writer.

(Signed) W.

APPENDIX G.

EXTRACT from the "London Gazette," of 1st May, 1855.

Memorandum.

Horse Guards,
25th April, 1855.

IN order to remove any doubt which may exist as to the rank and precedence of the Officers of the Honourable East India Company's Service, it is Her Majesty's pleasure that Officers of the Honourable East India Company's Service, whose Commissions shall be signed by authorities duly deputed to do so by Her Majesty, shall have rank and precedence with Officers of Her Majesty's Regular Army, according to the dates of their Commissions, in all parts of Her Majesty's dominions or elsewhere.

APPENDIX E.

MEMORANDUM upon the Supersession of British Officers by Officers of the late Honourable East India Company's Army, by Major-General Sir Percy E. Herbert, M.P.

1. THE Officers of the British Army are at the present time being superseded on a very large scale by their juniors of the Indian Army. This is a grievous professional injury to them, and they claim in justice to be protected from it.

2. So far back as 1807 the Duke of York, then Commander-in-Chief, claimed protection to British Officers serving in India from a similar supersession, although on a smaller scale.

3. The Government of the day took steps to remedy the evil.

4. Later the Duke of Wellington expressed the same views in the plainest language, as later still did Lord Hill, when individual cases of supersession occurred.

5. The evil and injury were always admitted and a remedy attempted.

6. This is a brief recapitulation of what took place on the subject at the time when Officers of the East Indian Army had no military rank west of the Cape of Good Hope, and were consequently in the eye of the law civilians in England.

7. In 1854, during the Russian War, with a view to enable Indian Officers to be employed with the Turkish or other contingent forces alongside of British troops, it was decided to give English rank to those employed, as an assault upon one of them by an English soldier would not have rendered him liable to punishment under martial law for striking an Officer, the Officers of the Indian Army being civilians in the eye of the law, except in Asia or East of the Cape of Good Hope.

8. It was granted, however, as a gracious boon from Her Majesty to the whole Indian Army. It was neither grudged nor complained of by the English Army.

9. In 1858, the Act abolishing the East India Company as the Governing Body of India was passed, and contained the following passage referring to the Officers of the Indian Army:

"And shall be entitled to the like pay, pensions, allowances, and privileges, and the like "advantages as regards promotion and otherwise, as if they had contii ued in the service of the "said Company."

10. Can it be maintained now, that this guarantee was intended to give the Indian Officers a right to supersede hundreds of senior British Officers, when supersession by a few, or even one individual Officer had been formerly guarded against?

11. Can it be supposed that Her Majesty would have been advised in 1854 to give the Indian Officers at large rank and precedence all over the world with British Officers according to their dates of commissions, at a time when the British Army was actually engaged in an arduous war, if the result of Her gracious boon was to be supersession and injury to Her own Army?

12. Can it be supposed that, if the East India Company had continued to exist as before,

Her Majesty might not have been advised to withdraw that boon rather than allow the continuance of the injury now complained of?

13. Unless all these propositions can be maintained, the terms of the guarantee given by Parliament do not bar the redress of the grievance; and if they are maintained then Parliament must be appealed to to authorise the remedy of the unintentional injustice arising out of the Act of 1858.

14. In 1861 the amalgamation was carried out, but in a manner unfair to the English Army.

15. Instead of amalgamating the Officers as they stood at that date—

General Officers with General Officers,
Colonels with Colonels,

and so on, letting all rise from rank to rank in order of seniority, the amalgamation was made prospective in a great measure, so that Junior Officers of the Indian Army were secured promotion over their seniors in the Queen's Army.

16. In other words Officers in the rank of Colonels were not to be amalgamated until they had passed over their seniors to the rank of Major-General.

17. When they had obtained this advantage, and superseded their seniors, amalgamation was to begin.

18. Possibly this was done under the false impression that the Parliamentary Guarantee required it, as the Indian Officers claimed that under their rules they would obtain quicker promotion than under the English rules. At any rate the injury about to be done to the Queen's Officers appears to have been entirely overlooked.

19. On the part of the English Army it is maintained, that the Parliamentary Guarantee was intended to secure the Indian Officers from being cast adrift or harshly dealt with by the new Indian Government under a Secretary of State, to secure them as good promotion as they had hitherto had and could fairly expect; and that it never was, or could have been the intention of Parliament to give them any claim to supersede the British Officers by hundreds, the more especially, when, as at present, by financial and other arrangements, they are receiving promotion far beyond what they ever used to obtain, or could have ever expected to obtain, under the Government of the East India Company.

20. The accompanying Lists are prepared, (I) showing the respective positions that Officers of the two armies held, according to the dates of their Commissions as Colonel, and (II) the number of the Senior British Officers over whom the Indian Officers now in the rank of Major-General have been promoted.

21. It will be seen that the supersession is wholesale, and it will continue so long as any Officer remains upon the Indian List who was an Officer of the East Indian Company's Army.

22. In three years' time the vacancies on the India List of Major-Generals will partially fall to the lot of the English Officers; but the result will be very trifling for many years to come, the principal result being that Officers on the Indian List will pass over the heads of those Indian Officers who were transferred to the Staff Corps as well as the British Officers who are their seniors.

23. 87 have already passed over their seniors since January 1861.

24. During the next three years, 31 more Indian Colonels will pass over the heads of more than 200 British Colonels senior to themselves.

25. Colonels Farquharson, Corfield, and St. John, in January 1861, superseded 47 Colonels senior to themselves.

26. In 1867 Colonel Bayley superseded 80 of his seniors; Colonel Reid, 101 of his seniors; Colonel Wemyss, 103.

27. In 1868, Colonel Durnsford, and 10 other Indian Colonels superseded senior Colonels in numbers varying in each case from 126 to 179.

28. 10 other Indian Officers, in 1868, superseded from 182 to 213 Colonels senior to themselves.

29. Lastly, Colonel Hamilton, of the Indian Army, in 1869, superseded 215 Officers when he was promoted to the rank of Major-General.

30. If the present system is allowed to continue, Colonel Shakespear and several other Officers of the Indian Army, Colonels of 1866, will, in 1872, supersede from 290 to 300 British Colonels, some of them Colonels of 1858—eight years their seniors in the rank of Colonel. It must be borne in mind that these numbers are exclusive of the Artillery and Engineer Officers of whom Colonel Hamilton superseded about 37.

31. After three years, the Indian Staff Corps Officers will not be promoted out of their turns, and the senior of them on the amalgamated list—Colonel Salmon—will have to wait till the 200 British Colonels mentioned in paragraph 24 are promoted.

32. Allowing for the increase of the British Establishment of General Officers by transfer of Staff Corps Generals from the Indian Establishment, and by casualties on the list of Colonels, this will take from twelve to fourteen years from the present time.

The Report of Colonel Egerton's Committee of last year says fifteen years.

33. In the meanwhile, the Colonels on the Indian List (not Staff Corps) will be promoted to vacancies on the Indian List of Generals, beginning with Colonel Reddie, Colonel of 1866, down to Colonel Lukin, Colonel of 1869,—48 in number.

34. The vacancies to which they will be entitled will be those which occur in the Indian List of General Officers (173 in number) which will, on an average, be 11 a year, less those which will fall to the lot of the English Establishment as above named.

35. At 11 a year, in nine years there will be 99 vacancies, of which the Indian Officers will probably get 44, the English Officers 55.

36. Therefore in 12 or 13 years, Colonel Lukin, a Colonel of 1869, will be promoted to Major-General on the Indian List.

37. Meanwhile twelve years will, at the outside, promote of the English Officers :—

In twelve years at 18 a year	216
Add for casualties in List of Colonels	18
And for vacancies in Indian List filled from British List ..	55
Total	289

38. As shown by the above calculation 289 British Colonels, which will come down to Colonel Calthorpe, a Colonel of 1866.

39. The constant supersession will therefore remain in full force all the next twelve years, and afterwards so long as an Indian List remains.

40. Colonel Lukin will supersede in 1881, about 165 Colonels senior to himself, belonging to the British and Staff Corps Lists, as Colonel Hamilton superseded 215 British Colonels in July 1869; and after 1881 the vacancies on the Indian List of Generals will be filled by Indian Officers who have not yet even attained the rank of Colonel, over the heads of the British and Staff Corps Officers who are Colonels of 1866.

41. The following paragraphs of Colonel Egerton's report demand attention :—

" 26. Supersession previously was only felt in India, but now, it follows the Officers of the " British Army, and affects them wherever they are associated with Officers in the Indian " Service in all parts of Her Majesty's dominions.

" 27. It is now a more grave and substantial injury than at the time Lord Hill so forcibly " condemned it.

" 28. It is not only in respect to the Senior Colonels of the British List that the operation " of the Royal Warrant of 15th June, 1864, has had an injurious effect; but the position and " prospects of those Colonels of the Indian Staff Corps who head the Amalgamated List, and " will have to rise on that List, have, if possible, been more grievously and detrimentally " affected, and their case equally demands a remedy.

" 29. At the present average rate of promotion to the rank of Major-General on the " British List, it will take 15 *years* to promote the Colonel next before Colonel Salmon, a Staff " Corps Officer, who heads the Amalgamated List.

" 30. At the present average rate of promotion to the rank of Major-General on the " Indian List, it will take *three years* to promote the Colonel next before Colonel Salmon on " that List. Hence, under existing arrangements, there will be a difference of 12 years in " the date of rank as Major-General between Colonel Salmon and the next Senior to him on " the Indian List—Colonel Shakespear,—although their commissions *as Colonel* date on the " same day, and the former entered the Service 14 *years before* the latter.

" 38. Eventually there will be between 90 and 100 General Officers added to the British " Establishment, on account of the Indian Staff Corps. Of these, about one-half will be trans- " ferred in a batch, as provided by Article 24 of the Warrant of 3rd February, 1866; and, if " the provisions of Article 23 of the same Warrant were to be strictly enforced, the remainder " (say 45) would be added from time to time in the order in which the Indian Staff Corps " Colonels would have been promoted had they remained on the Indian Establishment, instead " of being placed on the Amalgamated List of Colonels of the British Army.

" The latter addition would probably commence about the end of the year 1871, and " terminate in 1877."

42. There being now 173 Generals on the Indian Establishment, it is shown in the extracts above quoted, that in about the year 1877 the English List of Major-Generals will have been increased by about 90 to 100 Generals of the Indian Service being transferred to it, and will have attained its maximum.

43. The list of Colonels of British Army and Staff Corps will get all the vacancies that occur in that List.

44. There will, however, remain between 70 and 80 Generals on the Indian List, the vacancies on which list will be filled by the Indian Officers who are not on the Staff Corps.

45. These, when they became Colonels, would supersede thier seniors in obtaining the rank of Major-General, and would supersede both Staff Corps and the British Officers.

46. Thus the vacancies on the Indian List of 70 or 80 Generals would in 1881 be filled by officers who, at the present time, have not even attained the rank of Colonel, while 150 officers who are now serving in the British Army or in the Staff Corps, would still be unpromoted to the rank of Major-General.

I am aware that it has been proposed to rectify the position of each Officer in the List of Major-Generals, when he attains that rank.

This would be entirely inadequate as a remedy for the injury complained of, although of course a step in the right direction.

Justice demands that the Officers who have been wrongly promoted to the rank of Major-General shall not attain the rank of Lieut.-General until it comes to their turn in the corrected List of Major-Generals.

That all the superseded Officers receive, without delay, the rank of Major-General.

This will cause a large increased charge for their unattached pay, to be borne either by the English or Indian Treasury.

As the grievance has arisen from arrangements made by the Government of India, the expense of rectifying it ought not to fall upon the English Treasury.

If this increased cost is not granted, the newly promoted Major-Generals, and those promoted out of their turn, must be allowed to hold appointments and commands open to them now as Colonels.

Lastly,—It is only bare justice that all further promotions to the rank of Major-General shall be strictly in accordance with each Officer's seniority in the rank of Colonel, and that no more supersession be permitted.

PERCY E. HERBERT,
Major-General.

THE following officers, amongst many others who have received honours for distinguished service, have been superseded :—

Major-General Sir R. Walpole, K.C.B.	by	12	officers.
Major-General Sir A. Lawrence, K.C.B.	„	12	„
Major-General David Russell, C.B.	„	17	„
Major-General Sir H. Shirley, K.C.B.	„	19	„
Major-General Sir H. Storks, G.C.B.	„	18	„
Major-General Sir J. Garvock, K.C.B.	„	21	„
Major-General Sir W. Jones, K.C.B.	„	21	„
Major-General Sir A. Horsford, K.C.B.	„	32	„
Major-General McMurdo, C.B.	„	41	„
Major-General Earl of Longford, K.C.B.	„	47	„
Major-General Sir J. Douglas, K.C.B.	„	43	„
Colonel Sir E. Greathed, K.C.B.	„	35	„
Colonel Sir J. Jones, K.C.B.	„	34	„
Colonel Sir R. Kelly, K.C.B.	„	34	„

And in the Royal Engineers—

Sir John Gordon, K.C.B.	has been superseded	by	2	officers of Engineers.
Sir Frederick Chapman, K.C.B.	„	„	5	„
Sir J. L. Simmonds, K.C.B.	„	„	3	„
Sir W. Denison, K.C.B.	„	„	3	„

CASE of Major-General Sir David Wood, K.C.B., of the Royal Artillery.

Promoted to the rank of Colonel in 1855, and C.B. for distinguished service in the field.

Served in India in 1857 and 1858, as Brigadier.

Commanded nine batteries (all the Field Artillery) of the Army under Lord Clyde, that captured Lucknow.

Captain and Brevet Lieut.-Colonel Turner, Captain and Brevet Lieut.-Colonel Tombs, of the Indian Artillery, commanded batteries under his immediate orders.

They have both superseded him in the rank of Major-General in the Amalgamated Corps of Royal Artillery.

He has been superseded by 9 Officers junior to himself, several of them only Brevet Majors when he joined the Army in India as a Colonel.

CASES of Sir John Jones, K.C.B., and Sir E. Greathed, K.C.B.

At the siege of Delhi, in 1857, Sir J. Jones, K.C.B., was Lieutenant-Colonel Commanding the 60th Rifles, and Sir E. H. Greathed, K.C.B., was Major and Brevet Lieut.-Colonel in the 8th Regiment.

Both these officers, who distinguished themselves in that campaign, and who are still only Colonels, have been superseded by Major-General Norman, C.B., of the Indian Army, who was at the siege of Delhi only a Lieutenant in the 31st Bengal Native Infantry, and Assistant Adjutant-General.

Major-General Norman, C.B., entered the Army in the year 1844.

Colonel Sir J. Jones, K.C.B., entered the Army in the year 1828.

Colonel Sir E. H. Greathed entered the Army in the year 1832.

Sir John Jones held the rank of Brigadier-General in 1857-58.

Sir E. Greathed was a Brigadier in 1857-58.

ROYAL ARTILLERY.

I.

COMBINED Seniority List of British and Indian Royal Artillery now serving, according to the dates of their Commissions as Colonel.

NOTE.—To find the number by which a British Colonel has been superseded:—

From the Colonel's name on this List, count the names *in italics* down to and including the last name *in italics* on List II.: the *total* is the number required.

No.	Names. (British Officers in Roman Letters, Indian in Italics.)	Date of Promotion to Colonel.	No.	Names. (British Officers in Roman Letters, Indian in Italics.)	Date of Promotion to Colonel.
1	*G. Twemlow, col. comdt.* ..	28 *Nov.* 1854	56	*W. A. Orr*, C.B.	4 *March*, 1862
2	*R. Horsford, m.g.*	28 „ „	57	*E. Kaye*	6 *April*, „
3	*J. Fordyce, s., m.g.*	28 „ „	58	*G. Rowlandson*	9 *June* „
4	*A. Rowland, col. comdt.* ..	28 „ „	59	F. A. Campbell	15 Sept. „
5	*Sir William M. Coghlan*, K.C.B., *m.g.*	28 „ „	60	H. P. Goodenough	15 „ „
			61	H. F. Strange, C.B.	12 Nov. „
6	T. P. Flude, *col. comdt.* ..	28 „ „	62	G. B. Shakespear	22 Dec. „
7	H. G. Teesdale, *m.g.*.. ..	28 „ „	63	*E. B. Johnson*	19 *Jan.* 1863
8	A. A. Shuttleworth, *m.g.* ..	28 „ „	64	*H. A. Carleton*, C.B.. ..	10 *March*, „
9	*C. S. Reid, m.g.*	28 „ „	65	J. Turner, C.B.	18 „ „
10	J. M'Coy, *m.g.*	28 „ „	66	*C. V. Cox*	17 *April*, „
11	R. F. Crawford, *m.g.* ..	28 „ „	67	*J. H. Smyth*, C.B.	8 *July*, „
12	Sir J. St. George, K.C.B., *m.g.*	28 „ „	68	H. L. Gardiner	9 Aug. „
13	Sir E. C. Warde, K.C.B., *m.g.*	28 „ „	69	M. A. S. Biddulph	14 „ „
14	A. J. Taylor, *m.g.*	28 „ „	70	*W. H. Delamain*	1 *Sept.* „
15	V.C. C. Dickson, C.B., *m.g.*	29 June, 1855	71	*G. P. Sealy*	1 „ „
16	Sir D. E. Wood, K.C.B., *m.g.*	2 Nov. „	72	*Sir A. B. Kemball*, C.B., K.C.S.I.	1 „ „
17	J. W. Fitzmayer, C.B., *m.g.*	2 „ „			
18	*R. C. Moore*, C.B.	18 *Feb.* 1856	73	*W. K. Worster*	1 „ „
19	*George Balfour*, C.B.. ..	9 *April*, „	74	R. P. Radcliffe	26 Oct. „
20	W. H. Askwith, *m.g.* ..	20 June, 1857	75	C. P. Younghusband ..	26 „ „
21	C. J. Dalton, *m.g.*	20 „ „	76	E. B. Hamley, C.B.	2 Nov. „
22	F. M. Eardley-Wilmot, *m.g.*	20 „ „	77	S. E. Gordon, C.B.	2 „ „
23	J. H. Francklyn, C.B., *m.g.* ..	28 „ „	78	Hon. E. T. Gage, C.B. ..	2 „ „
24	G. Gambier, C.B., *m.g.* ..	6 July, „	79	C. S. Henry, C.B	2 „ „
25	H. S. Rowan, C.B.	14 Oct. „	80	*D. Reid*	23 *Dec.* „
26	*C. Lucas*	13 Nov. „	81	R. C. Romer	16 Jan. 1864
27	G. J. L. Buchanan, *b.g.* ..	28 „ „	82	V.C. *W. Olpherts*, C.B. ..	26 *Feb.* „
28	*J. W. Croggan, col. comdt.* ..	28 „ „	83	*G. Bouchier*, C.B.	25 *April*, „
29	*J. Abbott, m.g.*	28 „ „	84	*H. H. Maxwell*	23 *May*, „
30	T. B. F Marriott	6 Jan. 1858	85	*J. L. Barrow*, C.B.	8 *July*, „
31	T. Elwyn	13 „ „	86	*J. D. Mein*	8 „ „
32	C. J. Wright..	7 Feb. „	87	J. R. Anderson, C.B. ..	9 „ „
33	A. Benn	8 March, „	88	A. Thompson..	25 Sept. „
34	*F. Turner*, C.B., *m.g.* ..	24 „ „	89	W. A. Middleton, C.B. ..	7 Oct. „
35	W. J. Smythe	1 April, „	90	H. Clerk	28 Nov. „
36	V.C. *Sir H. Tombs*, K.C.B., *m.g.*	20 *July* „	91	*H. Hammond*	30 *Dec.* „
			92	*E. K. Money*..	24 *Jan.* 1865
37	C. L. D'Aguilar, C.B. ..	20 „ „	93	*G. P. Eaton*	24 *March*, „
38	A. T. Phillpotts	13 Aug. „	94	E. H. Fisher	1 April, „
39	J. H. Lefroy, *m.g.*	24 Sept. „	95	C. S. Longden	22 June, „
40	*H. W. Trevelyan*, C.B. ..	5 *March*, 1859	96	E. M. Boxer	22 „ „
41	*Sir J. Brind*, K.C.B., *m.g.* ..	26 *April*, „	97	J. R. Gibbon, C.B.	21 July, „
42	E. Wodehouse, C.B.	14 June, „	98	*W. D. Aitken*	3 *Aug.* „
43	*R. R. Kinleside, m.g.* ..	21 *Dec.* „	99	*G. B. Fuller*	3 „ „
44	*A. Huyshe, m.g.*	30 „ „	100	*W. Maxwell*	20 *Sept.* „
45	J. M. Adye, C.B.	19 May, 1860	101	*C. Douglas*	20 „ „
46	E. Price, C.B.	2 Nov. „	102	*H. E. L. Thuillier*	20 „ „
47	J. W. Domville, *b.g.*.. ..	2 „ „	103	*T. Brougham*..	22 *Dec.* „
48	*T. K. Whistler, m.g.* ..	6 *Feb.* 1861	104	*G. Selby*	18 *Feb.* 1866
49	*G. W. Y. Simpson, m.g.* ..	18 „ „	105	*E. Wray*	18 „ „
50	*J. Maitland, m.g.*	18 „ „	106	*J. Worgan*	18 „ „
51	*H. Forster*, C.B., *b.g.* ..	18 „ „	107	*J. Young*	18 „ „
52	E. Maberley, C.B.	23 „ „	108	*W. S. Hatch*..	18 „ „
53	W. M. Hall Dixon	23 „ „	109	*J. D. Woolcombe*, C.B. ..	18 „ „
54	*A. Broome*, C.S.I.	29 *April* „	110	*A. W. Macintire*, C.B. ..	18 „ „
55	*R. E. Knatchbull*	29 „ „	111	*G. Moir*, C.B...	18 „ „

Royal Artillery—*continued.*

No.	Names. (British Officers in Roman Letters, Indian in Italics.)	Date of Promotion to Colonel.	No.	Name. (British Officers in Roman Letters, Indian in Italics.	Date of Promotion to Colonel.
112	*J. G. Petrie*, C.B.	18 Feb. 1866	141	C. T. Franklin, C.B.	30 May, 1867
113	*T. H. Campbell*	18 „ „	142	A. C. Hawkins	1 June, „
114	*J. Eliot*	18 „ „	143	*A. V. Falls*	9 „ „
115	*H. Lewis*	18 „ „	144	A. P. S. Greene	20 „ „
116	*H. P. De Teissier*	18 „ „	145	E. A. Williams, C.B... ..	21 „ „
117	*C. H. Dickens*, C.S.I. ..	18 „ „	146	N. M'I. Mackay	16 July, „
118	*F. W. Swinhoe*	18 „ „	147	*A. M. Murray*	24 „ „
119	*G. E. Voyle*	18 „ „	148	G. Rotton	21 Sept. „
120	*C. H. Hutchinson*	24 „ „	149	*F. W. Bond*	2 *Oct.* „
121	W. W. Barry, C.B.	24 March, „	150	*C. S. Woodcock*	24 *Nov.* „
122	W. H. Cox	1 April, „	151	G. V. Johnson	24 Jan. 1868
123	Hon. D. M'D. Fraser, C.B. ..	3 „ „	152	A. F. Connell	12 Feb. „
124	*A. Wintle*	29 „ „	153	R. B. M'Crea..	22 „ „
125	*J. G. Balmain*..	12 *June*, „	154	*W. B. Marshall*	10 *March*, „
126	*H. Le G. Bruce*	14 *July*, „	155	J. L. Elgee	27 June, „
127	V.C. F. C. Maude	20 July, „	156	*H. T. Molesworth*	16 *July*, „
128	R. O'Connell	28 „ „	157	T. W. Milward, C.B.	15 Aug. „
129	W. J. E. Grant	24 Aug. „	158	*G. C. Brown*	1 *Sept.* „
130	*F. G. Nuthall*	14 *Sept.* „	159	*R. W. Fooks*..	1 „ „
131	*A. T. Cadell*	25 „ „	160	*R. G. H. Grant*	1 „ „
132	M. Clifford	28 „ „	161	*H. Wallace*, C.B.	1 „ „
133	*D. Gaye*	2 *Oct.* „	162	G. Shaw	20 „ „
134	J. Desborough..	11 Jan. 1867	163	*C. V. Bowie*	7 *Oct.* „
135	*R. Cadell*	11 *Feb.* „	164	A. F. F. Lennox	10 „ „
136	C. T. Du Plat	7 March, „	165	*H. R. Courtnay*	11 *Nov.* „
137	H. P. Yates, C.B.	26 April, „	166	P. G. Pipon	1 March, 1869
138	J. E. Michell, C.B.	26 „ „	167	*F. Conybeare*..	1 „ „
139	C. H. Smith, C.B.	26 „ „	168	G. T. Field	7 April „
140	N. O. S. Turner, C.B. ..	26 „ „			

ROYAL ARTILLERY.

II.

COMBINED Seniority List of British and Indian Royal Artillery now serving, according to the dates of their Commissions as Major-General.

NOTE.—To find the number by which a British Major-General has been superseded :—

From the number against his name in the *second* column of this List, deduct the number shown in the *first* column, the *difference* is the number required.

To find the number each Indian Officer has superseded :—

From the number against his name in the *first* column of this List, deduct the number shown in the *second* column, the *difference* is the number required.

No. on the List (I) of Colonels.	No. on the List of Major-Generals.	Names. (British Officers in Roman Letters, Indian in Italics.)	Date of Promotion to Major-General.
1	1	*G. Twemlow, col. comdt.*	17 *May,* 1859
2	2	*R. Horsford*	6 *Feb.* 1861
3	3	*J. Fordyce*	29 *April,* „
4	4	*A. Rowland, col. comdt.*	6 *Jan.* 1863
5	5	*Sir W. M. Coghlan,* K.C.B.	14 *April,* „
6	6	T. P. Flude, *col. comdt.*	28 July, 1864
7	7	H. G. Teesdale	15 Dec. „
8	8	A. A. Shuttleworth	18 „ „
9	9	*C. S. Reid*	24 *Jan.* 1865
10	10	J. M'Coy	9 Feb. „
18	11	*R. C. Moore,* C.B.	29 *March,* „
19	12	*G. Balfour,* C.B.	5 *June,* „
11	13	R. F. Crawford	31 Aug. „
12	14	Sir J. St. George, K.C.B.	30 Sept. „
13	15	Sir E. C. Warde, K.C.B.	27 Feb. 1866
26	16	*C. Lucas*	26 *April,* „
14	17	A. J. Taylor	12 May, „
28	18	*J. W. Croggan, col. comdt.*	12 *June,* „
29	19	*J. Abbott*	19 „ „
15	20	V.C. C. Dickson, C.B.	24 Aug. „
34	21	*F. Turner,* C.B.	18 *Jan.* 1867
36	22	V.C. *Sir H. Tombs,* K.C.B.	11 *March,* „
40	23	*H. W. Trevelyan,* C.B.	25 „ „
41	24	*Sir J. Brind,* K.C.B.	1 *June,* „
16	25	Sir D. E. Wood, K.C.B.	6 July, „
43	26	*R. R. Kinleside*	14 „ „
44	27	*A. Huyshe*	31 *Oct.* „
17	28	J. W. Fitzmayer, C.B.	29 Dec. „
20	29	W. H. Askwith	1 Jan. 1868
48	30	*T. K. Whistler*	6 *March,* „
21	31	C. J. Dalton	23 April, „
22	32	F. M. Eardley-Wilmot	2 Aug. „
23	33	J. H. Francklyn, C.B.	10 Nov. „
49	34	*G. W. Y. Simpson*	11 *Dec.* „
50	35	*J. Maitland*	14 „ „
24	36	G. Gambier, C.B.	18 March, 1869

ROYAL ENGINEERS.

I.

COMBINED Seniority List of British and Indian Royal Engineers now serving, according to the dates of their Commissions as Colonels.

NOTE.—To find the number by which a British Colonel has been superseded:—

From the Colonel's name on this List, count the names *in Italics* down to and including the last name *in Italics* on List II., the *total* is the number required.

No.	Names. (British Officers in Roman letters, Indian in Italics.)	Date of Promotion to Colonel.	No.	Names. (British Officers in Roman Letters, Indian in Italics.)	Date of Promotion to Colonel.
1	H. Servante, *l.g.*	28 Nov. 1854	46	R. M. Laffan	28 Nov. 1864
2	*W. B. Goodfellow, col. commdt.*	28 „ „	47	A. H. Freeling	28 „ „
3	E. Frome, *m.g.*	28 „ „	48	J. F. M. Browne, C.B. ..	26 Dec. „
4	C. E. Wilkinson, *m.g.* ..	28 „ „	49	*W. Kendall*	14 *April*, 1865
5	W. T. Renwick, *m.g.* ..	28 „ „	50	H. A. White	18 „ „
6	*Robert Cornelis, Lord Napier, l.g.*	28 „ „	51	P. B. Whittingham	17 May, „
			52	T. B. Collinson	30 Sept. „
7	Sir J. W. Gordon, *m.g.* ..	29 June, 1855	53	*J. Carpendall*	21 *Dec.* „
8	Sir F. E. Chapman, *m.g.* ..	2 Nov. „	54	*R. Maclagan*	18 *Feb.* 1866
9	*W. E. Baker, m.g.*	10 *March*, 1857	55	*J. D. Campbell*	18 „ „
10	*H. B. Turner, m.g.*	20 *June*, „	56	*M. K. Kennedy*	18 „ „
11	W. E. D. Broughton, *m.g.* ..	20 „ „	57	*W. R. Dickinson*	18 „ „
12	J. L. A. Simmonds, K.C.B., *m.g.*	12 Dec. „	58	*C. Scott*	18 „ „
13	Sir W. T. Denison, K.C.B., *m.g.*	13 „ „	59	L. Nicholson	20 July, „
14	E. W. Durnford	13 „ „	60	Hon. H. F. Keane	3 Aug. „
15	Sir H. James	16 „ „	61	*G. W. Walker*	30 *Sept.* „
16	G. Wynne	13 Jan. 1858	62	*J. A. Ballard*, C.B.	7 *Dec.* „
17	H. D. Harness	13 „ „	63	*W. A. Crommelin*, C.B. ..	18 *March*, 1867
18	C. E. Ford	13 „ „	64	J. Bayly	26 „ „
19	R. G. Hamilton	1 April, „	65	W. F. D. Jervois	1 April, „
20	W. C. Hadden	21 May, „	66	T. L. Gallwey	1 „ „
21	*Sir H. M. Durand*, C.B., K.C.S.I., *m.g.*	20 *July*, „	67	N. Burnaby	1 „ „
			68	V.C. W. O. Lennox	26 „ „
22	G. Bent	25 Oct. 1859	69	*J. E. T. Nicolls*	30 *June*, „
23	R. S. Beatson	27 „ 1860	70	*C. J. Hodgson*	1 *July*, „
24	*E. Lawford, m.g.*	18 *Feb.* 1861	71	*D. G. Robinson*	31 *Dec.* „
25	*C. W. Tremenheere*, C.B., *m.g.*	18 „ „	72	*J. C. Anderson*	7 *April*, 1868
26	S. Freeth	20 „ „	73	*C. E. D. Hill*	30 „ „
27	*H. Rigby*	12 *March*, „	74	*C. V. Wilkinson*	29 *June*, „
28	W. E. Hamley	10 June, „	75	*W. W. H. Greathed*, C.B. ..	7 *July*, „
29	E. Stanton, C.B.	24 May, 1862	76	F. C. Hassard	3 Aug. „
30	E. F. Bourchier	6 Aug. „	77	W. D. Gossett	3 „ „
31	E. Ogle	2 Sept. „	78	*H. St. C. Wilkins*	15 „ „
32	J. Cameron	2 Dec. „	79	*J. G. Fife*	1 *Sept.* „
33	*R. Strachey*, C.S.I.	31 „ „	80	*J. Jones*	1 „ „
34	*C. A. Orr*	29 *June*, 1863	81	*C. W. Hutchinson*	1 „ „
35	J. S. Hawkins	12 Aug. „	82	*E. H. Foord*	1 „ „
36	*A. J. M. Boileau*	1 *Sept.* „	83	E. J. Lake, C.S.I.	31 Dec. „
37	*J. R. Becher*, C.B.	13 *Oct.* „	84	T. W. Lovell, C.B.	5 Jan. 1869
38	H. W. Montagu, C.B. ..	2 Nov. „	85	*P. P. L. O'Connell*	15 „ „
39	J. H. Freeth	23 „ „	86	M. H. Synge	5 Feb. „
40	*H. W. B. Bell*	29 *Feb.* 1864	87	A. A'Court Fisher	15 „ „
41	*A. Taylor*, C.B.	31 *March*, „	88	V.C. Gerald Graham, C.B. ..	15 „ „
42	C. Fanshawe	1 April, „	99	E. W. Ward	15 „ „
43	G. F. Mann	20 June, „	90	*J. T. Walker*	27 „ „
44	S. Westmacott	13 Oct. „	91	*F. H. Rundall*	12 *May*, „
45	W. C. Menzies	25 „ „			

ROYAL ENGINEERS.

II.

COMBINED Seniority List of British and Indian Royal Engineers now serving, according to the dates of their Commissions as Major-General.

NOTE.—To find the number by which a British Major-General has been superseded :—

From the number against his name in the *second* column of this List, deduct the number shown in the *first* column, the *difference* is the number required.

To find the number each Indian Officer has superseded :—

From the number against his name in the *first* column of this List, deduct the number shown in the *second* column, the *difference* is the number required.

No. on the List (I) of Colonels.	No. on the List of Major-Generals.	Names. (British Officers in Roman Letters, Indian in Italics.)	Date of Promotion to Major-General.
6	1	*Robert Cornelis, Lord Napier*, G.C.B., G.C.S.I., *l.g.*	15 *Feb.*, 1861
2	2	*W. B. Goodfellow, col. comdt.*	6 *April*, 1863
1	3	H. Sevante, *l.g.*	3 Aug. „
3	4	E. Frome	5 Jan. 1864
9	5	*W. E. Baker*	2 *Aug.* 1865
10	6	*H. B. Turner*	21 *Dec.* „
4	7	C. E. Wilkinson	8 Feb. 1866
5	8	W. T. Renwick	10 April, „
7	9	Sir J. W. Gordon, K.C.B.	3 Aug. „
21	10	*Sir H. M. Durand*, C.B., K.C.S.I.	1 *March*, 1867
24	11	*E. Lawford*	1 „ „
25	12	*C. W. Tremenheere*, C.B.	1 „ „
8	13	Sir F. E. Chapman, K.C.B.	7 Sept. „
11	14	W. E. D. Broughton	1 Jan. 1868
12	15	J. L. A. Simmonds, K.C.B.	17 March, „
13	16	Sir W. J. Denison	7 Nov. „

CAVALRY AND INFANTRY.

I.

Seniority List of British and Indian Officers of Cavalry and Infantry, according to dates of their Commissions as Colonel.

Note.—To find the number by which a British Colonel has been superseded:—

From the Colonel's name on this List, count the names *in Italics* down to and including the last name *in Italics* on List II., the *total* is the number required.

No.	Names. (British Officers in Roman Letters, Indian in Italics.)	Date of Promotion to Colonel.	No.	Names. (British Officers in Roman Letters, Indian in Italics.)	Date of Promotion to Colonel.
1	J. T. Hill	20 June, 1854	55	Hon. A. C. Gordon, C.B.	28 Nov. 1854
2	J. Longfield, C.B.	20 ,, ,,	56	C. Cotton	28 ,, ,,
3	C. W. M. Balders, C.B.	20 ,, ,,	57	M. Smith	28 ,, ,,
4	F. W. Hamilton, C.B.	20 ,, ,,	58	H. Bates	28 ,, ,,
5	Sir C. H. Doyle, K.C.M.G.	20 ,, ,,	59	*Sir E. Green*, K.C.B.	28 ,, ,,
6	F. Horn, K.C.B.	20 ,, ,,	60	*G. Farquharson*	28 ,, ,,
7	J. F. G. Campbell, C.B.	20 ,, ,,	61	*W. R. Corfield*	28 ,, ,,
8	Lord F. Paulet, C.B.	20 ,, ,,	62	*R. St. John*	28 ,, ,,
9	Sir J. M. Smyth, K.C.B.	20 ,, ,,	63	*A. M. Becher*, C.B.	28 ,, ,,
10	W. J. D'Urban	20 ,, ,,	64	*J. F. Flemyng*	28 ,, ,,
11	H. J. French	20 ,, ,,	65	*F. Wheler*, C.B.	28 ,, ,,
12	J. F. Crofton	20 ,, ,,	66	*J. C. Hodgson*	28 ,, ,,
13	J. Grattan	20 ,, ,,	67	*J. Hobson*	28 ,, ,,
14	Hon. J. Lindsay	20 ,, ,,	68	T. M. Wilson	28 ,, ,,
15	W. Sullivan, C.B.	20 ,, ,,	69	G. Staunton	28 ,, ,,
16	Sir A. A. T. Cunninghame, K.C.B.	20 ,, ,,	70	C. Crutchley	28 ,, ,,
			71	C. R. Scott	28 ,, ,,
17	F. Hope	20 ,, ,,	72	*W. T. Trevelyan*	28 ,, ,,
18	J. S. Smith	20 ,, ,,	73	M. K. Atherley	28 ,, ,,
19	H. A. O'Neill	20 ,, ,,	74	*F. Rowcroft*	28 ,, ,,
20	R. Parker	20 ,, ,,	75	Sir T. Chute, K.C.B.	28 ,, ,,
21	C. Trollope, C.B.	20 ,, ,,	76	W. G. Brown	28 ,, ,,
22	Lord G. A. F. Paget, K.C.B.	20 ,, ,,	77	H. Jervis	28 ,, ,,
23	B. Taylor	20 ,, ,,	78	M. W. Smith, C.B.	28 ,, ,,
24	G. T. C. Napier, C.B.	20 ,, ,,	79	J. M. Perceval, C.B.	28 ,, ,,
25	E. R. Hill	28 Nov. ,,	80	H. W. Stisted, C.B.	28 ,, ,,
26	G. W. Key	28 ,, ,,	81	P. M. N. Guy, C.B.	28 ,, ,,
27	E. Pole	28 ,, ,,	82	F. Seymour, C.B.	28 ,, ,,
28	F. H. Robe, C.B.	28 ,, ,,	83	C. Steuart, C.B.	28 ,, ,,
29	Sir R. Walpole, K.C.B.	28 ,, ,,	84	J. L. Denis	28 ,, ,,
30	Sir A. J. Lawrence, K.C.B.	28 ,, ,,	85	Charles R., Earl De La Warr, C.B.	28 ,, ,,
31	Hon. G. Cadogan, C.B.	28 ,, ,,			
32	J. C. H. Gisbone	28 ,, ,,	86	F. P. Haines	28 ,, ,,
33	C. P. Ainslie	28 ,, ,,	87	*H. Troup*	28 ,, ,,
34	F. Murray	28 ,, ,,	88	*C. I. Jameson*	28 ,, ,,
35	Alexander Nelson, Viscount Bridport	28 ,, ,,	89	*W. M. Ramsay*	28 ,, ,,
			90	*H. Lyons*	28 ,, ,,
36	D. Russell, C.B.	28 ,, ,,	91	J. A. Lambert	28 ,, ,,
37	H. Shirley	28 ,, ,,	92	W. O'Grady Haly, C.B.	28 ,, ,,
38	W. S. Newton	28 ,, ,,	93	H. P. Raymond	28 ,, ,,
39	G. Dixon	28 ,, ,,	94	*Sir A. Bogle, Kt.*	28 ,, ,,
40	E. C. W. M. Milman	28 ,, ,,	95	*R. A. Bayly*	28 ,, ,,
41	S. Perceval	28 ,, ,,	96	V.C. Lord H. H. M. Percy	28 ,, ,,
42	H. Cooper	28 ,, ,,	97	*D. Simpson*	28 ,, ,,
43	R. Rumley	28 ,, ,,	98	*E. A. Cumberlege*	28 ,, ,,
44	Right Hon. Sir H. Storks, G.C.B., G.C.M.G.	28 ,, ,,	99	*J. Macdonald*	28 ,, ,,
			100	W. C. E. Napier	28 ,, ,,
45	Hon. G. C. W. Forester	28 ,, ,,	101	*Sir C. S. Stuart*	28 ,, ,,
46	E. C. Hodge, C.B.	28 ,, ,,	102	C. H. Ellice, C.B.	28 ,, ,,
47	T. Crombie	28 ,, ,,	103	H. R. Jones, C.B.	28 ,, ,,
48	*J. S. Down*	28 ,, ,,	104	*J. H. Shuldham*	28 ,, ,,
49	H. E. Doherty	28 ,, ,,	105	*J. Butler*	28 ,, ,,
50	A. H. Ferryman	28 ,, ,,	106	Sir T. Biddulph	28 ,, ,,
51	W. R. Faber	28 ,, ,,	107	C. Hagart, C.B.	28 ,, ,,
52	T. J. Galloway	28 ,, ,,	108	T. M. Steele, C.B.	28 ,, ,,
53	Sir J. Garvock, K.C.B.	28 ,, ,,	109	J. Creagh	28 ,, ,,
54	Sir W. Jones, K.C.B.	28 ,, ,,	110	E. Last	28 ,, ,,

Cavalry and Infantry—*continued.*

No.	Names. (British Officers in Roman Letters, Indian in Italics.)	Date of Promotion to Colonel.
111	J. P. Sparks	28 Nov. 1854
112	R. Lewis	28 „ „
113	T. Williams, C.B.	28 „ „
114	R. Wilbraham, C.B.	28 „ „
115	W. Irvin	28 „ „
116	*G. Burney*	28 „ „
117	*H. James*	28 „ „
118	*W. Lang*	28 „ „
119	F. Adams, C.B.	28 „ „
120	H. D. Griffiths, C.B.	28 „ „
121	J. Webber Smith, C.B. ..	28 „ „
122	J. S. O'Connor, C.B.	28 „ „
123	F. D. George, C.B.	28 „ „
124	J. Yorke	28 „ „
125	H. D. O'Halloran	28 „ „
126	H.R.H. Frederick of Schleswig-Holstein, K.G.	28 „ „
127	J. H. E. Dalrymple	28 „ „
128	S. Raimer	28 „ „
129	H. H. Graham	28 „ „
130	*W. C. M'Leod*	28 „ „
131	H. Renny	28 „ „
132	G. Campbell	28 „ „
133	J. J. Bisset, C.B.	28 „ „
134	J. Armstrong, C.B.	28 „ „
135	E. A. Holditch, C.B. ..	28 „ „
136	R. N. Phillips	28 „ „
137	Sir A. Horsford, K.C.B. ..	28 „ „
138	W. D. Patton	28 „ „
139	G. J. Carey, C.B.	28 „ „
140	Rt. Hon. Sir Percy E. Herbert, K.C.B.	28 „ „
141	*C. Troup*	28 „ „
142	*G. A. Baillie*	28 „ „
143	A. Borton	28 „ „
144	*J. Welshman*	28 „ „
145	D. E. Mackirdy	28 „ „
146	J. S. Brownrigg, C.B. ..	28 „ „
147	W. M. S. McMurdo, C.B. ..	28 „ „
148	W. Munro, C.B.	28 „ „
149	*D. Babington*	28 „ „
150	*F. R. A. Freeman*	28 „ „
151	*W. F. Beatson*	28 „ „
152	A. C. Errington	28 „ „
153	C. A. Edwards, C.B. ..	28 „ „
154	S. T. Christie, C.B.	28 „ „
155	W. M. Wood	28 „ „
156	*J. E. Landers*	28 „ „
157	H. Smyth, C.B.	28 „ „
158	Lord Mark Kerr, C.B. ..	28 „ „
159	H. W. Whitfield	28 „ „
160	J. Wilkie	28 „ „
161	H. P. de Bathe	28 „ „
162	R. Waddy	28 „ „
163	T. H. Tidy	28 „ „
164	E. Haythorne	28 „ „
165	T. Brooke	28 „ „
166	H. D. White, C.B.	28 „ „
167	W. S. R. Norcott, C.B. ..	29 June, 1855
168	D. Lysons, C.B.	17 July, „
169	W. E., Earl of Longford, K.C.B.	17 „ „
170	H.R.H. Prince Edward of Saxe Weimar, C.B.	5 Oct. „
171	*A. Tucker*	2 *April*, 1856
172	*P. Harris*	8 *June*, „
173	V.C. *James Travers* ..	6 *Dec.* „
174	*J. Liptrapp*	20 June, 1857
175	*H. Marshal*	20 „ „
176	*J. Liddell*	20 „ „
177	*E. Darvall*	20 *June*, 1857
178	A. Little, K.C.B.	20 „ „
179	J. Douglas, C.B.	20 „ „
180	Sir J. Douglas, K.C.B. ..	20 „ „
181	*H. Palmer*	29 *July*, „
182	*D. Pott*	22 *Aug.* „
183	H. C. B. Daubeny, C.B. ..	30 Sept. „
184	Hon. R. W. P. Curzon, C.B.	17 Nov. „
185	*Sir N. R. Chamberlain*, K.C.B., K.C.S.I.	27 „ „
186	*P. T. Cherry*	28 „ „
187	T. Tapp, C.B.	28 „ „
188	*P. K. Skinner*	28 „ „
189	*W. E. Mulcaster*	28 „ „
190	*T. Carenagh*	28 „ „
191	*J. S. Paton*	28 „ „
192	*H. J. Pelly*	1 *Dec.* „
193	Sir T. W. M'Mahon, Bt., C.B.	12 „ „
194	A. Maxwell, C.B.	12 „ „
195	R. T. Farren, C.B.	12 „ „
196	R. Wardlaw, C.B.	12 „ „
197	J. T. Grant, C. B.	12 „ „
198	A. Low, C.B.	12 „ „
199	P. Hill, C.B.	29 „ „
200	A. B. Montgomery, C.B. ..	13 Jan. 1858
201	Sir E. H. Greathed, K.C.B. ..	19 „ „
202	*J. M. B. F. Tytler*	19 „ „
203	Sir John Jones, K.C.B. ..	19 „ „
204	W. N. Custance, C.B. ..	19 „ „
205	A. C. Bentinck	30 „ „
206	Sir R. D. Kelly, K.C.B. ..	30 „ „
207	J. R. Stuart, C.B.	15 Feb. „
208	Hon. R. Rollo, C.B.	23 „ „
209	*R. R. Younghusband* ..	2 *March* „
210	E. H. F. Pocklington ..	6 „ „
211	H. J. Warre, C.B.	9 „ „
212	J. E. Goodwyn, C.B. ..	19 „ „
213	R. De Salis, C.B.	20 „ „
214	A. T. Heyland, C.B.	20 „ „
215	G. V. Maxwell, C.B.	23 „ „
216	E. S. Smyth	23 „ „
217	E. R. Jeffreys	1 April „
218	Hon. F. Colbourne, C.B. ..	2 „ „
219	*J. D. Macpherson*	5 „ „
220	Hon. St. G. G. Foley, C.B. ..	13 „ „
221	C. R. Egerton	18 „ „
222	C. Elmhirst	20 May „
223	R. C. H. Taylor	21 „ „
224	Hon. A. E. Hardinge, C.B. ..	25 „ „
225	R. N. Tinley	28 „ „
226	E. A. Somerset, C.B.	29 „ „
227	*R. Shubrick*	18 *June* „
228	A. C. Goodenough, C.B. ..	24 „ „
229	P. L. M'Dougall	17 July „
230	A. Macdonell, C.B.	20 „ „
231	J. A. R. Raines, C.B. ..	20 „ „
232	*R. N. Faunce*	20 „ „
233	W. Fenwick, C.B.	26 „ „
234	J. A. Street, C.B.	11 Aug. „
235	C. Herbert, C.B.	19 „ „
236	J. W. S. Smith, C.B	2 Sept. „
237	F. P. Harding, C.B.	9 „ „
238	E. S. Claremont, C.B. ..	14 „ „
239	C. C. Shute, C.B.	21 „ „
240	J. W. Armstrong, C.B. ..	1 Oct. „
241	*J. W. Bayley*	14 „ „
242	T. S. Conway, C.B.	26 „ „
243	Lord A. Paget	26 „ „
244	C. Hind	26 „ „
245	A. F. Ansell	26 „ „

Cavalry and Infantry—*continued.*

No.	Names. (British Officers in Roman Letters, Indian in Italics)	Date of Promotion to Colonel.	No.	Names. (British Officers in Roman Letters, Indian in Italics.)	Date of Promotion to Colonel.
246	T. H. Pearson, C.B.	26 Oct. 1858	315	C. J. C. Mills	23 March, 1861
247	L. Fyler, C.B.	26 „ „	316	J. J. Hort	9 April, „
248	Sir J. E. Alexander ..	26 „ „	317	*C. Birdwood*	9 „ „
249	P. Brown	26 „ „	318	J. Simpson, C.B.	20 „ „
250	R. H. J. Beaumont Beaumont	26 „ „	319	H. G. Rainey, C.B.	20 „ „
251	A. H. L. Wyatt	26 „ „	320	J. A. Cole	20 „ „
252	J. B. Creagh	26 „ „	321	P. W. MacMahon, C.B. ..	4 May, „
253	E. A. G. Muller	26 „ „	322	R. W. Lacy	16 „ „
254	C. F. Parkinson	26 „ „	323	V.C. F. F. Maude, C.B. ..	30 „ „
255	A. J. Lockhart, C.B. ..	7 Dec. „	324	E. H. Maxwell	11 June, „
256	J. E. Orange	13 „ „	325	J. McN. Walter, C.B. ..	17 „ „
256	E. T. Lacy	24 „ „	326	J. E. Thackwell, C.B. ..	25 „ „
257	G W. Mayow, C.B.	2 April, 1859	327	J. E. Addison	6 Aug. „
258	E. B. Hale, C.B.	26 „ „	328	E. Roche	6 „ „
259	J. A. Ewart, C.B.	26 „ „	329	W. Inglis, C.B.	8 „ „
260	Sir W. W. Turner, C.B., K.C.S.I.	26 „ „	330	L. Shadwell, C.B.	4 Sept. „
261	W. Parke, C.B.	26 „ „	331	C.J. Foster	20 „ „
262	H. E. Longden, C.B... ..	26 „ „	332	G. F. S. Call, C.B.	21 Oct. „
263	*C. Reid*	26 „ „	333	*G. W. Bishop*	2 *Nov.* „
264	M. S. H. Lloyd	14 May, „	334	J. C. Brooke	11 „ „
265	J. Roche	17 July, „	335	R. Bruce	26 „ „
266	*W. B. Wemyss*	20 „ „	336	R. Y. Shipley, C.B.	13 Dec. „
267	H. R Benson, C.B.	23 Sept. „	337	C. H. Teush-Hecker ..	20 „ „
268	W. McPherson	17 Oct. „	338	J. E. Collings, C.B.	21 „ „
269	H. B. H. Rogers	7 Dec. „	339	*G. Ramsay*	1 Jan. 1862
270	W. R. Haliday	13 „ „	340	*H. Pritchard*..	1 „ „
271	J. T. Airey, C.B.	26 „ „	341	*H. W. Matthews*	1 „ „
272	W. H. Bradford	29 „ „	342	R. Budd	27 „ „
273	C. L. B. Maitland	15 Jan. 1860	343	H. Bingham	2 Feb., „
274	W. T. Layard	1 March, „	344	H. Hamilton, C.B.	6 „ „
275	J. H. Laye	8 „ „	345	T. Addison, C.B.	16 „ „
276	W. C. Forrest	8 „ „	346	C. C. McIntyre, C.B... ..	7 March, „
277	Hon. J.W.B. Macdonald, C.B.	1 April, „	347	J. M. Primrose, C.S.I. ..	20 „ „
278	R. J. Baumgartner, C.B. ..	6 „ „	348	F. R. Elrington	29 „ „
279	R. Blane, C.B.	11 „ „	349	C. L. Nugent	11 April, „
280	G. C. Clarke	23 „ „	350	P. A. Butler	14 „ „
281	C. F. Fordyce, C.	4 May, „	351	*C. T. Chamberlain*, C.S.I. ..	14 „ „
282	*G. P. Wish*	2 *June*, „	352	*J. D. Stewart*	20 „ „
283	F. A. Whimper	3 „ „	353	R. O. Bright..	1 May „
284	R. W. D. Leith, C.B. ..	26 „ „	354	V.C. E. W. D. Bell, C.B. ..	17 „ „
285	W. R. Preston	6 July, „	355	W. Sankey	18 „ „
286	T. C. Kelly, C.B.	11 „ „	356	R. L. Ross	18 „ „
287	H. F. Ponsonby	2 Aug. „	357	E. Wodehouse ..	1 June „
288	O. P. Bourke	3 „ „	358	*C. Prior*	10 „ „
289	G. Erskine	12 „ „	359	F. Burton, C.B.	10 „ „
290	*G. Malcolm*	30 „ „	360	*H. B. Lumsden*, C.B.	15 „ „
291	E. G. Wynyard	31 „ „	361	W. Gordon	25 „ „
292	B. E. M. Gordon	31 „ „	362	G. H. S. Willis	26 „ „
293	T. Pattle, C.B.	15 Sept. „	363	J. H. Wingfield	28 „ „
294	*G. L. Russell*	7 *Oct.* „	364	Lord A. C. L. Fitzroy ..	14 July, „
295	W. L. Ingall, C.B.	25 „ „	365	*G. De Sausmarez*	16 „ „
296	E. G. Hallewell	2 Nov. „	366	D. Watson	21 „ „
297	C. P. B. Walker, C.B. ..	9 „ „	367	J. Daubeny, C.B.	11 Aug. „
298	W. Clarke	12 „ „	368	M. R. S. Whitmore ..	13 „ „
299	H. J. Stannus, C.B.	18 „ „	369	R. Warden, C.B.	15 „ „
300	Sir H. F. F. Johnson, Bt. ..	13 Dec. „	370	C. H. Norris, C.B.	17 „ „
301	A. J. Herbert, C.B.	14 „ „	371	E. Adams	19 „ „
302	*H. F. Dunsford*, C.B. ..	18 „ „	372	C. W. Thompson	17 Sept., „
303	Lord Seaton	22 „ „	373	M. Bruce	3 *Oct.* „
304	N. S. Gardiner	22 „ „	374	*F. W. Burroughs*	5 „ „
305	S. Wells, C.B.	24 „ „	375	J. A. V. Kirkland	25 „ „
306	H. G. Hart	27 „ „	376	J. R. Glyn, C.B.	29 „ „
307	K. D. Mackenzie, C.B. ..	15 Jan. 1861	377	J. Cockburn	6 Nov., „
308	R. Pratt, C.B.	23 „ „	378	D. W. Carleton	9 „ „
309	Hon. L. Smyth, C.B. ..	9 Feb. „	379	A. Scudamore, C.B.	9 „ „
310	J. W. Reynolds	13 „ „	380	A. Leslie, C.B.	9 „ „
311	F. C. A. Stephenson, C.B. ..	15 „ „	381	H. L. Maydwell	9 „ „
312	E. A. Whitmore	15 „ „	382	R. W. M. Fraser	25 „ „
313	E. W. C. Wright	9 March, „	383	G. W. P. Bingham, C.B. ..	29 „ „
314	Lord A. G. Russell	10 „ „	384	*W. K. Babington*	12 *Dec.*, „

Cavalry and Infantry—*continued.*

No.	Names. (British Officers in Roman Letters, Indian in Italics.)	Date of Promotion to Colonel.	No.	Names. (British Officers in Roman letters, Indian in Italics.)	Date of Promotion to Colonel.
385	J. Conolly	14 Dec., 1862	455	H. H. Greer, C.B.	18 Feb., 1864
386	A. F. Bond	21 „ „	456	H. Bird	22 „ „
387	W. Hope, C.B.	26 „ „	457	R. Carey, C.B.	1 March „
388	*S. C. Briggs*	6 *Jan.*, 1863	458	R. W. Lowry	13 „ „
389	W. T. Curtis	19 „ „	459	*H. J. Barr*	16 „ „
390	*L. S. Hough*	19 „ „	460	T. Lightfoot, C.B.	4 April, „
391	T. E. Knox, C.B.	24 „ „	461	V.C. Hon. H. H. Clifford, C.B.	23 „ „
392	W. J. Loftus	28 „ „	462	H. D'O. Torrens, C.B. ..	27 „ „
393	M. G. Adams	29 „ „	463	W. F. Macbean	1 May, „
394	E. W. Donovan	31 „ „	464	R. Hawkes	4 „ „
395	H. P. Hepburn, C.B. ..	2 Feb. „	465	*W. T. Hughes*	18 „ „
396	P. G. H. Somerset, C.B. ..	2 „ „	466	T. B Butt	23 „ „
397	R. M. Best	5 „ „	467	*D. Hodson*	29 „ „
398	H. C. Brewster	12 „ „	468	W. A Fyers, C.B.	8 June, „
399	R. Knox	19 „ „	469	*J. Forbes*, C.B.	13 „ „
400	W. J. Chamberlayne ..	19 „ „	470	W. Drysdale, C.B.	20 „ „
401	J. D. Carmichael, C.B. ..	2 Mar. „	471	H. H. Crealock, C.B... ..	6 July, „
402	J. E. Robertson	5 „ „	472	*J. C. Innis*	15 „ „
403	D. Anderson	5 „ „	473	*H. Daly*, C.B.	24 „ „
404	*H. W. Blake*	12 „ „	474	J. N. Sargent, C.B.	29 „ „
405	F. G. Wilkinson	16 „ „	475	C. Sawyer	30 „ „
406	R. R. Harris	17 „ „	476	R. G. A. Luard	4 Aug. „
407	W. P. Radcliffe, C.B. ..	26 „ „	477	E. Seager	5 „ „
408	T. H. Pakenham	27 „ „	478	Hon. D. C. FitzGerald de Ros	30 „ „
409	F. P. Nott	27 „ „	479	*H. Milne*	25 „ „
410	W. Payn, C.B.	31 „ „	480	H. R. Browne	18 Sept. „
411	T. Ross	1 April, „	481	*J. L. Vaughan*	21 „ „
412	*R. G. Taylor*, C.B., C.S.I. ..	3 „ „	482	T. R. Crawley	23 „ „
413	H. E. Weare, C.B.	10 „ „	483	W. H. Kirby	12 Oct. „
414	H. M. Hamilton	12 „ „	484	G. J. Peacocke	18 „ „
415	*W. F. Nuthall*	21 „ „	485	J. R. S Sawyer, C.B. ..	21 „ „
416	Hon. F. A. Thesiger, C.B. ..	30 „ „	486	V.C. *S. J. Browne*, C.B. ..	17 *Nov.* „
417	*M. Galwey*, C.B.	9 May, „	487	L. Graham	4 Dec. „
418	R. Harrison	19 „ „	488	A. C. Robertson	15 „ „
419	E. W. D. Lowe, C.B. ..	2 June, „	489	*D. S. Montgomery*	20 „ „
420	*A. Fytche*	10 „ „	490	T. H. Clifton	26 „ „
421	Hon. A. G. C. Chichester ..	16 „ „	491	A. M. M'Donald	13 Jan. 1865
422	F. R. Palmer, C.B.	22 „ „	492	*C. Cureton*	14 *Feb.* „
423	W. A. Stratton	30 „ „	493	R. White	21 „ „
424	H. J. Shaw	6 July, „	494	A. F. Jenner..	21 „ „
425	W. H. Seymour, C.B. ..	7 „ „	495	J. B. Spurgin	9 March, „
426	Sir W. Russell, C.B.... ..	20 „ „	496	A. W. Murray, C.B.	16 „ „
427	*D. M. Stewart*, C.B.	20 „ „	497	D. J. Gamble, C.B.	21 „ „
428	T. W J. Fitzwigram ..	26 „ „	498	G. B. Milman	30 „ „
429	J. Miller	3 Aug. „	499	V. Baker	30 „ „
430	V.C. J. C. Guise	7 „ „	500	J. De M. M. Prior	2 April, „
431	J. P. Robertson, C.B. ..	28 „ „	501	Hon. E. C. H. Massey ..	3 „ „
432	J. H. King, C.B.	30 „ „	502	J. Ross, C.B.	3 „ „
433	J. W. Cox, C.B.	4 Sept. „	503	G. J. Brown	4 May, „
434	*H. W. Norman*, C.B. ..	8 „ „	504	W. F. Brett	6 „ „
435	A. A. Chapman .. .	17 „ „	505	R. R. Hawley	18 „ „
436	*G. W. G. Green*, C.B. ..	22 „ „	506	F. A. Willis, C.B.	21 „ „
437	*R. Hamilton*	24 „ „	507	*W. P. Hampton*	4 *June*, „
438	G. W. A. Higginson ..	30 „ „	508	G. J. Wolseley	5 „ „
439	T. G. A. Oakes, C.B...	1 Oct. „	509	F. Carey	19 „ „
440	R. Hume, C.B.	8 „ „	510	W. C. Hodgson	10 July, „
441	C. W. Green..	9 „ „	511	C. E. P. Gordon	3 Aug. „
442	A. Browne, C.B.	13 „ „	512	*W. F. Marriott*, C.S.I. ..	16 „ „
443	W. Boyle	13 „ „	513	*C. T. E. Hinde*	1 *Sept.* „
444	John Guilt, C.B.	22 „ „	514	R. S. Baynes..	7 „ „
445	F. Peyton	23 „ „	515	*G. G. MacDonell*	12 „ „
446	B. O'Brien	26 „ „	516	P. B. Roe	18 „ „
447	C. Adams	17 Nov. „	517	J. C. H. Jones	21 „ „
448	G. W. T. Rich, C.B.	17 „ „	518	H. R. Norman, C.B.	23 „ „
449	*A. R. Manson*	7 Dec. „	519	G. G. C. Stapylton	25 „ „
450	J. W. Thomas, C.B.	31 „ „	520	E. T. Gloster	26 „ „
451	W. T. Dickson	5 Jan. 1864	521	G. C. Vialls	26 „ „
452	O. Langley	11 „ „	522	J. H. C. Robertson	27 „ „
453	W. Wilby, C.B.	15 Feb. „	523	*L. Barrow*	30 „ „
454	*A. T. Wilde*, C.B., C.S.I. ..	18 „ „	524	Hon. P. R. B. Feilding, C.B.	7 Oct. „

Cavalry and Infantry—*continued.*

No.	Names. (British Officers in Roman letters, Indian in Italics.)	Date of Promotion to Colonel	No.	Names. (British Officers in Roman letters, Indian in Italics.)	Date of Promotion to Colonel.
525	W. T. L. Patterson	12 Nov. 1865	535	*Sir A. P. Phayre*, K.C.S.I., C.B.	18 *Feb.* 1866
526	*C. A. Barwell*	14 „ „	536	*B. Boyd*	18 „ „
527	*H. E. S. Abbott*	20 „ „	537	*F. E. Voyll*	18 „ „
528	J. G. R. Aplin	23 „ „	538	*J. Liptrott*	18 „ „
529	C. Hood	23 „ „	539	*J. Hennessy*	18 „ „
530	V.C. C. C. Fraser, C.B. ..	18 Jan. 1866	540	*C. Mackenzie*	18 „ „
531	*H. M'K. Taylor*	6 *Feb.* „	541	*F. Maitland*	18 „ „
532	R. J. Eagar	15 „ „	542	*H. Nott*	18 „ „
533	Hon. S. J. G. Calthorpe ..	15 „ „	543	*J. T. Shakespear*	18 „ „
534	V.C. *D. M. Probyn*, C.B. ..	15 „ „			

AMALGAMATED LIST.

No.	Names. (British and Staff Corps Officers in Roman letters, Officers rising on Indian List in Italics.)	Date of Promotion to Colonel.	No.	Names. (British and Staff Corps Officers in Roman letters, Officers rising on Indian List in Italics.)	Date of Promotion to Colonel.
544	W. B. Salmon, Staff Corps ..	18 Feb. 1866	583	M.C.Spottiswoode, Staff Crps.	18 Feb. 1866
545	*G. B Reddie, Ben. I.* ..	18 „ „	584	*W. Vine, Mad. C.*	18 „ „
546	J. K. Spence, Staff Corps ..	18 „ „	585	H. Man, Staff Corps ..	18 „ „
547	G. M. Hill „ ..	18 „ „	586	J. White „	18 „ „
548	*J. Barrett, Ben. I.*	18 „ „	587	W. J. Cooke „	18 „ „
549	T. Stock, Staff Corps ..	18 „ „	588	C. L Showers „	18 „ „
550	*E. P. Lynch, Bom. I.* ..	18 „ „	589	*W. G. Owen, Mad. I.* ..	18 „ „
551	G. Jackson, Staff Corps ..	18 „ „	590	A. Turner, Staff Corps ..	18 „ „
552	*R. J. Hawthorne, Ben. C.* ..	18 „ „	591	A. J. Greenlaw „ ..	18 „ „
553	W. G. Woods, C.S.I., Staff Corps	18 „ „	592	H. D. Innes „ ..	18 „ „
			593	*S. B. Faddy, Ben. I.* ..	24 „ „
554	R. T. Snow, Staff Corps ..	18 „ „	594	*R. A. Doria, Mad. I.* ..	24 „ „
555	J. Kitson „ ..	18 „ „	595	W. C. R. Macdonald, Staff Corps	24 „ „
556	W. H. Ryves „ ..	18 „ „			
557	*S. F. Macmullen, Ben. C.* ..	18 „ „	596	Lord G. J. Manners „	5 March, „
558	*B. R. Powell, Bom. I.* ..	18 „ „	597	T. A. Carey „	18 „ „
559	R. N. Raikes, Staff Corps ..	18 „ „	598	C. F. M. Mundy „	23 „ „
560	*G. Sturrock, Mad. I.* .	18 „ „	599	*G. Caulfeild, Ben. I.* ..	23 „ „
561	E. E. Miller, Staff Corps ..	18 „ „	600	J. M. Macdonald	28 „ „
562	P. W. Luard „ ..	18 „ „	601	A. R. Thornhill, Staff Corps	27 April, „
563	G. Verner „ ..	18 „ „	602	J. P. Redmond	10 May, „
564	H. Ramsay, C.B. „ ..	18 „ „	603	A. M'Kinstry	17 „ „
565	A. Boyd „ ..	18 „ „	604	E. G. Buller, C.B.	23 „ „
566	R. C. Lawrence, C.B., Staff Corps	18 „ „	605	S. G. Jenyns, C.B. ..	24 „ „
			606	J. C. Brooke, Staff Corps ..	12 June „
567	H. Nicoll, Staff Corps ..	18 „ „	607	R. Woolley „ ..	13 „ „
568	*A. H. A. Hervey, Mad. I.* ..	18 „ „	608	*F. F. Warden, M. I.* ..	13 „ „
569	*R. C. Tytler, Ben. I.* ..	18 „ „	609	E T. Dalton, C.S.I.	13 „ „
570	A. Wyndham, Staff Corps ..	18 „ „	610	*D. S. Dodgson, Ben. I.* ..	20 *July* „
571	G. A. Fisher „ ..	18 „ „	611	C. W. Strong	14 Aug. „
572	C. Cooke „ ..	18 „ „	612	G. H. Earl of Mount Charles	24 „ „
573	J. Wilson „ ..	18 „ „	613	W. Hardy	16 Sept. „
574	S. H. Becher „ ..	18 „ „	614	J. W. D'Oyly	17 „ „
575	E. A. H. Webb, C.S.I., Staff Corps	18 „ „	615	J. C. Gawler	15 Oct. „
			616	E. Fellowes	10 Nov. „
576	F. D. Atkinson, Staff Corps	18 „ „	617	R. Richards	13 „ „
577	A. K. Gore „ ..	18 „ „	618	C. S Hutchinson	19 „ „
578	C. Harris „ ..	18 „ „	619	*E. C. Beall, Bom. I.* ..	11 *Dec.* „
579	F. H. Scott „ ..	18 „ „	620	C. R. W. Hervey, C.B., Staff Corps	11 „ „
580	J. S. D. Tulloch „ ..	18 „ „			
581	H. T. Vincent „ ..	18 „ „	621	J. E. Gastrell	11 „ „
582	G. W. Russell „ ..	18 „ „	622	*W. T. Money, M. I.*	1 *Jan.* 1867

Amalgamated List—*continued.*

No.	Names. (British and Staff Corps Officers in Roman letters, Officers rising on Indian List in Italics.)	Date of Promotion to Colonel.
623	*W. H. Freese, M. I.* ..	1 Jan., 1867
624	*A. C. Silver, M. I.*	1 „ „
625	*J. P. Coode, M. I.*	1 „ „
626	*E. D. Watson, Ben. I.* ..	1 „ „
627	*J. W. Schneider, Bom. I.* ..	1 „ „
628	*D. Hamilton, M. I.*	1 „ „
629	*J. S. Gell, Bom. I.*	1 „ „
630	*D. Brown, M. I.*	1 „ „
631	*A. A. Macdonell, Ben I.* ..	1 „ „
632	*G. S. Dobbie, M. I.*	1 „ „
633	*A. N. Rich, M. I.*	1 „ „
634	C. V. Jenkins, 19th Hussars	1 „ „
635	W. Birch, 104th Foot .	1 „ „
636	P. S. Thompson, 14th Hussars	6 „ „
637	J. H. F. Elkington	7 „ „
638	Sir E. F. Campbell, Bart. ..	12 „ „
639	T. Thompson, Staff Corps ..	17 „ „
640	G. W. Peyton „ ..	17 „ „
641	S. J. K. Whitehill „ ..	17 „ „
642	J. T. Bar „ ..	17 „ „
643	*H. A. Adams Bom. I.* ..	7 *Feb.* „
644	A. F. Steele	20 Jan. „
645	A. H. L. Fox	22 „ „
646	G. A. Leckie, Staff Corps ..	7 Feb. „
647	H. D. Abbott, C.B. „ ..	9 „ „
648	H. Grierson	18 „ „
649	S. F. C. Annesley	3 March „
650	Hon. J. J. Bourke	8 „ „
651	E. W. Boudier, Staff Corps	8 „ „
652	S. Richards „ ..	8 „ „
653	Sir A. Alison, Bart., C.B. ..	17 „ „
654	L. Farrington	25 „ „
655	C. J. Robarts, Staff Corps ..	20 April, „
656	R. Bruce	17 May „
657	S. J. Batten, Staff Corps ..	10 June „
658	M. J. Turnbull „ ..	28 „ „
659	S. H. J. Davies „ ..	28 „ „
660	*W. W. Anderson, Bom. C.* ..	30 *July* „
661	*J. Field, Bom, I.*	30 *Sept.* „
662	*J. G. Halliday, M. I.* ..	2 *Oct.* „
663	*J. Gordon, Bom. I.*	18 „ „
664	A. B. Hankey, 83rd Foot ..	29 July „
665	T. Raikes, 102nd Foot ..	30 „ „
666	R. Patton, 107th Foot ..	30 „ „
667	E. Newdigate, h. p. *late* Dep. Bn.	23 Oct. „
668	H. D. Ellis, 9th Foot ..	7 Nov. „
669	W. F. Lord Abinger, Scots F. Guards	21 „ „
670	*J. C. Graves, Bom. C.* ..	27 „ „
671	R. S. Wilson, Staff Corps ..	18 Dec. „
672	*W. T. Williams, M.I.* ..	18 „ „
673	G. Harkness, Staff Corps ..	18 „ „
674	G. N. K. A. Yonge . ..	23 „ „
675	R. Phayre, C.B., Staff Corps	6 Jan., 1868
676	T. Clerk, „	10 „ „
677	J. H. M. Babington „ ..	10 „ „
678	C. C. McCallum „ ..	10 „ „
679	T. Greenaway „ ..	10 „ „
680	C. M. Barrow „ ..	19 „ „
681	D. Boyd „ ..	19 „ „
682	W. Ashburner „ ..	19 „ „
683	*W. R. Cunningham, Ben. I.* ..	31 „ „
684	W. H. Slade, 5th Lancers ..	23 „ „
685	A. W. H. Meyrick, Scots F Guards	13 Feb. „
686	F. Young, Staff Corps ..	15 „ „
687	J C. Haughton, C.S.I., Staff Corps	15 „ „
688	F. Marshall, C.B., 2nd Life Guards	6 March, 1868
689	A. Bassano, 32nd Foot ..	16 „ „
690	G. Rigaud, 60th „ ..	22 April „
691	G. Allgood, C.B., Staff Corps	28 „ „
692	*C. J. Fullerton, M. I.* ..	24 *May* „
693	*F. W. Drummond, C.B., Ben. C.*	2 *June* „
694	*M. Cholmeley, Mad. I.* ..	12 „ „
695	W. H. B. de Horsey, Gr. Gds.	29 April „
696	D. G. Pollard, Staff Corps ..	12 June „
697	A. C. Plowden „ ..	13 „ „
698	*H. E. Walpole, Mad. I.* ..	13 „ „
699	*F. C. Barber* „ ..	13 „ „
700	**V.C.** Sir H. M. Havelock, Bart., C.B..	17 „ „
701	T. F. Wilson, C.B., Staff Corps	20 „ „
702	R. B. Prettejohn, C.B. ..	3 July „
703	W. Aitchison	10 „ „
704	F. O. Salusbury, C.B. ..	11 „ „
705	H. T. Walker	28 „ „
706	C. Tower, C.B., 3rd Dn. Gds.	4 Aug. „
707	M. Dillon, Rifle Brig. ..	15 „ „
708	Sir W. L. Merewether, C.B., K.C.S.I., Staff Corps ..	15 „ „
709	W. G. Cameron, 4th Foot ..	15 „ „
710	W. E. Macleod, Staff Corps..	15 „ „
711	A. W. Lucas „ ..	15 „ „
712	F. A. E. Loch „ ..	15 „ „
713	E. Campbell „ ..	15 „ „
714	H. H. A. Wood „ ..	15 „ „
715	H. W. Holland „ ..	15 „ „
716	A. Robinson „ ..	27 „ „
717	R. Hughes, 3rd W.I.R. ..	28 „ „
718	C. Baring, Cold. Gds. ..	2 Sept, „
719	F. G. Kempster, Staff Corps	5 Oct. „
720	A. R. Fraser „ ..	5 „ „
721	C W. Moore, 108th Foot ..	2 Nov. „
722	W. Hill, 2nd W.I.R. ..	28 „ „
723	H. R. Hibbert, 7th Foot ..	1 Dec. „
724	W. C Trevor, C.B., 14th Foot	8 „ „
725	S. Thacker, Staff Corps ..	11 „ „
726	C. P Malony „ ..	11 „ „
727	*H. Stanley, Bom. I.*	12 „ „
728	H. Hopkinson, Staff Corps ..	12 „ „
729	R. R. Mainwaring „ ..	21 „ „
730	W. T. Ffrench „ ..	21 „ „
731	A. L. Steele „ ..	21 „ „
732	A. F. Place „ ..	21 „ „
733	E. B. Cureton, Cav. Depôt ..	28 „ „
734	H. K. Burne, Staff Corps ..	30 „ „
735	G. H. Saxton „ ..	11 Jan. 1869
736	W. H. Simpson „ ..	11 „ „
737	C. F. Aitchison „ ..	18 „ „
738	J. C. M'Leod, 42nd Foot ..	29 „ „
739	G. F. Shakespear, Staff Corps	10 Feb. „
740	*W. W. Taylor, Bom. I.* ..	13 „ „
741	**V.C.** M. Walker, 3rd Foot..	15 „ „
742	H A. Sarel, C.B., h.p., 17th Lan.	15 „ „
743	*F. T. Wroughton, Ben. I.* ..	18 „ „
744	W. J. F. Stafford, Staff Corps	22 „ „
745	R. J. Fielden, 60th Foot ..	1 March, „
746	R. J. Meade, C.S.I., Staff Corps	1 „ „
747	J. M. Macgregor, Staff Corps	1 March, 1869
748	*G. R. Cookson, Ben. I.* ..	1 „ „
749	G. Holroyd. Staff Corps ..	1 „ „
750	G. R. McMullin „ ..	1 „ „
751	F. J. B. Priestley „ ..	2 „ „

Amalgamated List—*continued.*

No.	Names. (British and Staff Corps Officers in Roman Letters, Officers rising on Indian List in Italics.)	Date of Promotion to Colonel.	No.	Names. (British and Staff Corps Officers in Roman Letters, Officers rising on Indian List in Italics.)	Date of Promotion to Colonel.
752	R. Palmer, 2nd Life Gds. ..	8 March, 1869	761	V.C. G. L. Goodlake, Cold. Gds.	30 April, 1869
753	*E. H. Bowdich, Bom. I.* ..	10 „ „			
754	F. P. Layard, Staff Corps ..	11 „ „	762	E. Tomkinson, Cav. Depôt ..	30 „ „
755	*C. O. Lukin, Mad. I.* ..	11 „ „	763	V.C. C. T. Bourchier, h.p., Rifle Brig.	30 „ „
756	W. Agg, 51st Foot	22 „ „			
757	E. R. Richards, Staff Corps..	27 „ „	764	F. H. Synge, 43rd Foot ..	1 May, „
758	A. R. Harrence, 53rd Foot..	19 April „	765	Hon. R. Monck, Cold. Gds...	14 „ „
759	H. A. Trevelyan, 7th Hussars	19 „ „	766	J. C. Battray, 90th Foot ..	3 June, „
760	J. Gubbins, 23rd Foot ..	20 „ „	767	W. S. Furneaux, 103rd Foot	14 „ „

CAVALRY AND INFANTRY.

II.

SENIORITY List of British and Indian Officers of Cavalry and Infantry, according to the dates of their Commissions as Major-General.

NOTE.—To find the number by which a British Major-General has been superseded:—

From the number against his name in the *second* column of this List, deduct the number shown in the *first* column, the *difference* is the number required.

To find the number each Indian Officer has superseded:—

From the number against his name in the *first* column of this List, deduct the number shown in the *second* column, the *difference* is the number required.

No. on the List (I) of Colonels.	No. on the List of Major-Generals.	Names. (British Officers in Roman Letters, Indian in Italics.)	Date of Promotion to Major-General.
1	1	J. T. Hill	30 July, 1860
2	2	J. Longfield, C.B.	3 Aug. „
3	3	C. W. M. Balders, C.B.	31 „ „
4	4	F. W. Hamilton, C.B.	31 „ „
5	5	Sir C. H. Doyle, K.C.M.G.	15 Sept. „
6	6	Sir F. Horn, K.C.B.	13 Oct. „
7	7	J. F. G. Campbell, C.B.	12 Nov. „
8	8	Lord F. Paulet, C.B.	13 Dec. „
59	9	*Sir E. Green, K.C.B.*	18 „ „
9	10	Sir J. R. Smyth, K.C.B.	24 „ „
10	11	W. J. D'Urban	27 „ „
11	12	H. J. French	18 Jan., 1861
60	13	*G. Farquharson*	25 „ „
61	14	*W. R. Corfield*	30 „ „
62	15	*R. St. John*	4 *Feb.* „
12	16	J. F. Crofton	9 March, „
13	17	J. Grattan, C.B.	10 „ „
14	18	Hon. J. Lindsay	12 „ „
15	19	W. Sullivan, C.B.	23 „ „
16	20	Sir A. A. T. Cunynghame, K.C.B.	20 April, „
63	21	*A. M. Becher*, C.B.	27 „ „
17	22	F. Hope	7 May, „
18	23	J. S. Smith	17 June „
64	24	*T. F. Flemyng*	11 *July*, „
65	25	*F. Wheler*	21 „ „
66	26	*J. S. Hodgson*	23 „ „
19	27	H. A. O'Neill	6 Aug. „
20	28	R. Parker	24 „ „
67	29	*J. Hobson*	2 *Sept.* „
21	30	L. Trollope, C.B...	20 „ „
48	31	*J. S. Down*	2 Nov. „
22	32	Lord G. A. F. Paget, K.C.B.	11 „ „
23	33	B. Taylor	15 „ „

Cavalry and Infantry—*continued.*

No. on the List (I) of Colonels.	No on the List of Major-Generals.	Names. (British Officers in Roman Letters, Indian in Italics.)	Date of Promotion to Major-General.
24	34	G. T. C. Napier, C.B.	15 Dec. 1861
72	35	*Willoughby Trevelyan, Bombay Cavalry*	1 *Jan.* 1862
74	36	*Francis Rowcroft, C.B., Bengal Infantry*	1 „ „
25	37	Edward Rowley Hill	2 Feb. „
26	38	George William Key	6 „ „
27	39	Edward Pole	16 „ „
28	40	Frederick Holt Robe, C.B.	14 March „
29	41	Sir Robert Walpole, K.C.B.	30 May „
30	42	Sir A. J. Lawrence, K.C.B.	1 June „
31	43	Hon. George Cadogan, C.B.	3 „ „
87	44	*Hugh Troup, Bengal Infantry*	10 „ „
88	45	*C. I. Jameson, Bombay Infantry*	15 „ „
32	46	J. C. H. Gisbone	28 „ „
89	47	*W. M. Ramsay, Bengal Infantry*	1 *July,* „
33	48	C. P. Ainslie	7 „ „
90	49	*H. Lyons, Bombay Infantry*	16 „ „
94	50	*Sir Archibald Bogle, Kt., Bengal Infantry*	2 *Aug.* „
34	51	Freeman Murray	13 „ „
35	52	Alexander Nelson, Viscount Bridport	19 „ „
36	53	David Russell, C.B.	3 Sept. „
95	54	*Richard A. Bayly, Bombay Infantry*	6 „ „
97	55	*David Simpson, Bengal Infantry*	2 *Oct.* „
37	56	Sir Horatio Shirley, K.C.B.	24 „ „
38	57	William Samuel Newton	6 Nov. „
40	58	Egerton C. W. M. Milman	9 „ „
41	59	Spencer Perceval	9 „ „
42	60	Henry Cooper	9 „ „
43	61	Randal Rumley	9 „ „
44	62	Right Hon. Sir Henry Storks, G.C.B., G.C., *m.g.*	12 „ „
98	63	*Edward Altham Cumberlege, Bengal Infantry*	22 „ „
99	64	*John Macdonald, Bengal Infantry*	12 *Dec.* „
45	65	Hon. George C. W. Forester	29 Jan. 1863
46	66	Edward Cooper Hodge, C.B.	30 „ „
47	67	Thomas Crombie	5 Feb. „
49	68	Henry Edward Doherty, C.B.	8 „ „
50	69	Augustus Halifax Ferryman, C.B.	12 „ „
51	70	William Raikes Faber	9 March, „
101	71	*Sir Charles S. Stuart, Bombay Infantry*	12 „ „
104	72	*T. H. Shuldham, Bengal Infantry*	18 „ „
52	73	T. J. Galloway	27 „ „
53	74	Sir John Garvock, K.C.B.	1 April „
54	75	Sir William Jones, K.C.B.	1 „ „
105	76	*John Butler, Bengal Infantry*	3 „ „
116	77	*George Burney* „ „	17 „ „
55	78	Hon. A. H. Gordon, C.B.	8 June, „
117	79	*H. James, Bombay Infantry*	10 „ „
118	80	*William Lang* „ „	29 „ „
56	81	Corbet Cotton	6 July, „
57	82	Mathew Smith	9 Sept. „
58	83	Henry Bates	9 Oct. „
68	84	Thomas Maitland Wilson	7 Jan. 1864
69	85	George Staunton	12 „ „
130	86	*W. C. M'Leod, Madras Infantry*	18 „ „
70	87	Charles Crutchley	31 „ „
71	88	Charles Rochfort Scott	21 Feb. „
73	89	Mark Kerr Atherley	12 March, „
75	90	Sir T. Chute, K.C.B.	9 April, „
76	91	W. Gust Brown	29 „ „
77	92	Henry Jervis	17 May, „
141	93	*Colin Troup, Bengal Infantry*	26 „ „
142	94	*G. A. Baillie, Madras Infantry*	28 „ „
144	95	*J. Welshman, Bengal Infantry*	25 *June* „
78	96	Michael William Smith, C.B.	4 July, „
185	97	*Sir N. B. Chamberlain*	5 *Aug.* „
79	98	John Maxwell Perceval, C.B.	8 „ „
80	99	Henry William Stisted, C.B.	10 „ „
149	100	*David Babington, Madras Infantry*	17 „ „
81	101	P. M. N. Guy, C.B.	9 Sept. „
82	102	Francis Seymour, C.B.	10 „ „
83	103	Charles Steuart, C.B.	3 Oct. „
150	104	*W. R. A. Freeman, Madras Infantry*	21 „

Cavalry and Infantry—*continued.*

No. on the List (I) of Colonels.	No on the List of Major-Generals.	Names. (British Officers in Roman Letters, Indian in Italics.)	Date of Promotion to Major-General.
84	105	John Leslie Dennis	28 Oct. 1864
85	106	Charles R. Earl De La Warr, C.B.	29 „ „
86	107	F. P. Haines	25 „ „
91	108	John Arthur Lambert	27 Dec. „
151	109	*William Ferguson Beatson, Bengal Infantry*	8 *Jan.* 1865
92	110	William O'Grady Haly, C.B.	12 „ „
93	111	H. P. Raymond	6 Feb. „
96	112	V.C. Lord H. H. M. Percy	10 „ „
100	113	W. C. E. Napier	9 March „
156	114	*J. E. Landers, Bengal Infantry*	12 „ „
102	115	C. H. Ellice, C.B.	23 „ „
103	116	H. R. Jones, C.B.	2 April, „
171	117	*Auchumty Tucker, Bengal Staff Corps*	9 „ „
106	118	Sir T. Biddulph, K.C.B.	31 May, „
172	119	*P. Harris, Bengal Staff Corps*	13 *June,* „
173	120	V.C. *James Travers, Bengal Infantry*	23 *July,* „
107	121	Charles Hagart, C.B.	28 „ „
108	122	Thomas M. Steele, C.B.	17 Aug. „
174	123	*John Liptrap, Bengal Infantry*	22 „ „
109	124	James Creagh	28 „ „
110	125	Edward Last	5 Sept. „
111	126	J. P. Sparks, C.B.	26 „ „
175	127	*Hubert Marshal, Madras Infantry*	9 *Oct.* „
176	128	*John Liddell, Bombay Infantry*	12 „ „
177	129	*Edward Darvall, Madras Staff Corps*	20 *Nov.* „
112	130	Robert Lewis	12 Jan. 1866
113	131	Thomas Williams, C.B.	14 „ „
114	132	Richard Wilbraham, C.B.	26 „ „
181	133	*H. Palmer, Bengal Staff Corps*	7 *Feb.* „
182	134	*David Pott*	15 „ „
115	135	William Irvin	3 March, „
119	136	Frank Adams, C.B.	4 „ „
120	137	H. D. Griffiths, C.B.	31 „ „
121	138	J. Webber Smith, C.B.	20 April, „
122	139	L. S. O'Connor, C.B.	24 „ „
123	140	F. D. George, C.B.	6 May, „
186	141	*P. T. Cherry, Madras Cavalry*	27 „ „
124	142	John Yorke, C.B.	17 June, „
125	143	H. D. O'Halloran	25 „ „
126	144	H.R.H. Frederick of Schleswig-Holstein, K.G.	3 July, „
188	145	*P. K. Skinner, Bombay Staff Corps*	23 „ „
189	146	*W. E. Mulcaster, Bengal Staff Corps*	26 *Aug.* „
190	147	*Orfeur Cavenagh* „ „	17 *Sept.* „
127	148	J. H. E. Dalrymple	28 Oct. „
191	149	*J. S. Paton, Bengal Staff Corps*	29 „ „
192	150	*H. J. Pelly, Bombay* „	6 *Nov.* „
202	151	*J. M. B. F. Tytler, Bengal Staff Corps*	13 „ „
209	152	*R. R. Younghusband, Bombay Staff Corps*	6 *Dec.* „
128	153	S. Raimer	6 Jan. 1867
129	154	H. H. Graham, C.B.	20 „ „
219	155	*J. D. Macpherson, Bengal Infantry*	24 „ „
131	156	H. Renny	2 Feb., „
132	157	G. Campbell, C.B.	4 „ „
227	158	*R. Shubrick, Madras Infantry*	12 „ „
232	159	*R. N. Faunce, Madras Staff Corps*	26 „ „
133	160	J. J. Bisset, C.B.	8 March, „
241	161	*J. W. Bayley, Madras Staff Corps*	13 „ „
263	162	*C. Reid*	5 *April,* „
266	163	*W. R. Wemyss, Bengal Cavalry*	3 *July,* „
134	164	J. Armstrong, C.B.	6 „ „
135	165	E. A. Holdrich, C.B.	3 Sept. „
136	166	R. N. Phillips	8 Dec. „
282	167	*G. P. Wish, Bombay Staff Corps*	9 „ „
290	168	*G. Malcolm, Bombay Infantry*	15 „ „
137	169	Sir A. H. Horsford, K.C.B.	1 Jan., 1868
138	170	W. D. P. Patton	1 „ „
139	171	G. J. Carey, C.B.	21 „ „
140	172	Right Hon. Sir Percy E. Herbert, K.C.B.	28 „ „
294	173	*Sir E. L. Russell, Bombay Infantry,* K.C.S.I.	30 „ „
143	174	Arthur Borton, C.B.	31 „ „
145	175	D. E. Mackirdy	21 Feb., „

Cavalry and Infantry—*continued.*

No. on the List (I) of Colonels.	No. on the List of Major-Generals.	Names. (British Officers in Roman Letters, Indian in Italics.)	Date of Promotion to Major-General.
302	176	*H. G. Durnsford, Bengal Infantry*	22 Feb. 1868
317	177	*C. Birdwood, Bombay Infantry*	6 March „
333	178	*G. W. Bishop, Bengal Infantry*	6 „ „
339	179	*G. Ramsay, Bengal Staff Corps*	6 „ „
340	180	*H. Pritchard, Madras* „	6 „ „
341	181	*H. W. Matthews, Bengal Infantry*	6 „ „
351	182	*C. T. Chamberlain*, C.S.I., *Bengal Staff Corps*	6 „ „
352	183	*J. D. Stewart, Bombay Infantry*	6 „ „
358	184	*C. Prior, Bengal* „	6 „ „
360	185	*H. B. Lumsden, Bengal Staff Corps*	6 „ „
365	186	*G. De Sausmarez, Madras Infantry*	6 „ „
146	187	J. S. Brownrigg, C.B.	13 „ „
147	188	W. M. S. McMurdo, C.B.	27 „ „
148	189	W. Munro, C.B.	29 „ „
152	190	A. C. Errington	9 April, „
153	191	C. A. Edwards, C.B.	19 „ „
374	192	*F. W. Burroughs, Bengal Infantry*	20 „ „
154	193	S. T. Christie, C.B.	21 „ „
384	194	*W. K. Babington, Madras Infantry*	22 „ „
155	195	W. M. Wood	1 May, „
157	196	H. Smyth, C.B.	9 „ „
388	197	*S. Briggs, Madras Staff Corps*	28 *June*, „
158	198	Lord Mark Kerr, C.B.	12 July, „
159	199	H. W. Whitfield	13 Aug., „
390	200	*L. S. Hough, Bombay Staff Corps*	16 „ „
160	201	John Wilkie	25 „ „
161	202	H. P. de Bathe	29 „ „
404	203	*H. W. Blake, Madras Infantry*	19 *Oct.*, „
412	204	*R. G. Taylor*, C.S.I., *Bengal Staff Corps*	28 „ „
415	205	*W. F. Nuthall, Bengal Infantry*	9 *Nov.* „
162	206	R. Waddy, C.B.	10 „ „
417	207	*M. Galwey, Madras Infantry*	10 „ „
420	208	*A. Fytche*	18 „ „
163	209	Thomas H. Tidy	22 „ „
164	210	Edmund Haythorne	23 „ „
165	211	Thomas Brooke	29 „ „
166	212	H. Dalrymple White, C.B.	2 Dec. „
167	213	W. S. R. Norcott, C.B.	10 „ „
427	214	*D. M. Stewart*	24 „ „
168	215	Daniel Lysons, C.B.	27 „ „
169	216	W. L., Earl of Longford, K.C.B.	31 „ „
170	217	H.R.H. Prince Edward of Saxe Weimer, C.B.	23 Feb. 1869
178	218	A. Little, K.C.B.	21 March, „
434	219	*H. W. Norman*	23 „ „
179	220	J. Douglas, C.B.	25 „ „
436	221	*G. W. G. Greene*	30 „ „
437	222	*R. Hamilton*	8 May, „
180	223	Sir J. Douglas, K.C.B.	12 „ „

APPENDIX F.

War Office,
3rd November, 1869.

Sir,

I HAVE the honour, by direction of Sir Wm. James, to request that you will cause me to be furnished with a Return of the number of Colonels included in No. 1 List of Cavalry and Infantry—annexed to the Memorandum of Major-General the Right Honourable Sir Percy E. Herbert—who will not be entitled to the Unattached Pay of a Major-General. Also of the number of Colonels of the Cavalry and Infantry, entitled, on their promotion, to the Unattached Pay of a Major-General, who were passed over by Major-General Hamilton of the Indian Army, promoted on 8th May, 1869.

I have, &c.,
J. MILTON, Secretary.

The Military Secretary, Horse Guards.

Horse Guards,
4th November, 1869.

Sir,

In compliance with the request contained in your letter of the 3rd instant, I have the honour to transmit, for the use of the Committee on Army Supersession, a Return of the number of Colonels—included in List No. 1 of Cavalry and Infantry, annexed to the Memorandum of Major-General the Right Honourable Sir Percy Herbert—who will not be entitled to the Unattached Pay of Major-General. I have also to state that 194 is the number of Colonels, of Cavalry and Infantry, entitled on their Promotion to the Unattached Pay of Major-General, who were passed over by Major-General Hamilton, of the Indian Army, at his Promotion, on 8th May, 1869.

I have, &c.,
W. F. Forster.

The Secretary to the Committee
on Army Supersession.

Correction of Major-General Sir P. Herbert's Confidential Lists of Colonels and Major-Generals.

No.	Names.	Reason for Omission of Name.
	Cavalry and Infantry.	
39	G. Dixon, Major-General ..	A Retired Full-Pay Officer, Depôt Battalion, with Honorary Rank.
244	C. Hind, Colonel ..	Not entitled to pay of a General Officer on promotion.
246	T. H. Pearson, " ..	Ditto.
249	P. Brown, " ..	Ditto.
250	R. Beaumont, " ..	Ditto.
252	J. Creagh, " ..	Ditto.
254	C. Parkinson, " ..	Ditto.
256	J. Orange, " ..	Ditto.
264	M. S. Lloyd, " ..	Ditto.
265	J. Roche, " ..	Ditto.
268	W. McPherson, " ..	Ditto.
269	H. Rogers, " ..	Ditto.
283	F. Whimper, " ..	Ditto.
304	N. Gardiner, " ..	Ditto.
368	M. Whitmore, " ..	Ditto.
371	E. Adams " ..	Ditto.
377	J. Cockburn, " ..	Ditto.
386	A. F. Bond, " ..	Ditto.
393	M. G. Adams, " ..	Ditto.
406	R. Harris, " ..	Ditto.
409	F. Nott, " ..	Ditto.
429	C. Green, " ..	Ditto.
441	J. Miller " ..	Ditto.

Amalgamated List.

No.	Name.	Reason for Omission of Name.
635	W. Birch, Colonel ..	Retired on Pension, 104th Foot with Honorary Rank of Major-General.

Names Omitted which should be included.

After No. 567. Colonel W. F. Eden, Madras Staff Corps, 18th February, 1868.

After No. 714. Colonel F. A. E. Loch, Bombay Staff Corps, 15th August, 1868.

APPENDIX G.

Notes on a Confidential Memorandum circulated by Major-General Sir Percy Herbert, in regard to the Supersession of British Officers by Officers of the late Honourable East India Company's Army, by Major-General Balfour, Royal (Madras) Artillery.

The Preamble, in regard to the supersession of Officers of the British Army by Officers of the late East India Company's Army, is, I submit, calculated to convey an erroneous impression. Such supersession is of recent date, having only been brought about since the rule of the East India Company ceased, as will be seen by the following explanations :—

I.

1. The rules under which the Officers of the East India Company's Army were serving prior to 1858—when by Act of Parliament the Officers of the Indian Army were made British Officers, and the Army was constituted Her Majesty's Indian Army—prevented supersession of British Officers.

2. It is only in consequence of Regulations passed since the termination of the Company's rule, that more extensive promotions have taken place amongst the Officers of Her Majesty's Indian Army than would have been the case if they had remained in their former position.

3. These changes have, it is true, led to a comparative degree of supersession by some grades of the Indian Army.

4. It is, however, stated in the first paragraph of the Memorandum, that British Officers are superseded on "a very large scale" by their juniors of the Indian Army.

5. A list is annexed of the Officers of the British and Indian Armies, as they ought to stand, by seniority, according to Sir Percy Herbert's views. In that list his own name is placed above those of two Indian Officers, Troup and Baillie, who have attained a higher position than himself on the list of Major-Generals.

6. This is an unfortunate selection for illustrating the supersession suffered by British Officers.

7. Turning to the Army List, I find that all three Officers have commissions as Colonels, dated 28th November, 1854; but as Troup and Baillie entered the Army in 1819, before Sir Percy Herbert was born, it can hardly be considered that he has much right to complain of his present position.

8. Sir Percy Herbert entered the Army in 1840, became a Major on 27th May, 1853, a Lieutenant-Colonel on the day following, and attained the rank of Colonel on the 28th November, 1854, within fifteen months after leaving the grade of Captain. Such a case requires no comment. Few Indian Officers have ever had such openings for rising in rank, and but few British Officers attain rank in that rapid way.

Replies to Major-General Balfour's Notes, by Major-General Sir Percy Herbert.

The writer of these Notes takes exception to the Preamble or heading of my memorandum. He says "such supersession is of recent date, having only been brought "about since the rule of the East India Company ceased." In these words he appears to me to admit ample grounds for my claim for the British Officers, inasmuch as he admits that such supersession did not take place while the two Armies were separate, and has arisen now from arrangements made since the Act of Parliament was passed which transferred the Indian Army to the Crown.

Consequently, the unjust advantage which I complain has been given to the Indian Officers can in no way be covered by the Parliamentary guarantee in the Act of 1858, inasmuch as it had no existence at the time of the passing that Act, "having only," to use the writer's own words, "been brought about since the rule of the East India Company "ceased."

I.

1. I agree. "It is only in consequence of regulations passed since the termination of "the Company's rule, that more extensive promotions have taken place amongst the "Officers of Her Majesty's Indian Army than would have been the case if they had "remained in their former position."

2. In this paragraph again my case is admitted, viz.,—that Her Majesty's Government have given exceptional advantages to the Indian Officers to the serious professional injury of all British Officers who held Her Majesty's Commission in 1858.

3. The writer here admits supersession, but does not explain what he means by "a compa-"rative degree of supersession."

5. This paragraph contains an inaccurate statement. I annexed two lists to my Memorandum, one a list of Indian and English Officers as they did stand in the rank of Colonel, the other as they do stand in the rank of Major-General. It is not therefore accurate to say that "a list is annexed of the Officers of the British and "Indian Armies, as they ought to stand by seniority, *according to Sir Percy* "*Herbert's* views." The lists, as the writer cannot fail to know, were prepared from the Army Lists. The remark which seems to imply that I have improperly placed my name above those of Officers senior to myself, is one which I think the writer will, on further consideration, regret.

7. This paragraph omits to state the fact that Colonels Troup and Baillie were Junior Colonels to myself.

The date of entry into the Army is put forward by the writer *ad captandum*, as he must be aware that it has not as yet ever regulated promotion to the rank of General in either the British or the Indian Army.

8. The writer here refers to me personally, and, after making an inaccurate statement of the promotion I received, uses these words, "Such a case requires no comment."

I find it commented on nevertheless in three previous and in five subsequent paragraphs. He says in Section XII. that my promotion "has been by the aid of "money and influence, aristocratic and political." He gives no authority for that statement.

Even if true, it is entirely irrelevant to the claim that I have undertaken to urge, that hundreds of British Officers, and Officers of the Indian Staff Corps, should not be superseded by their juniors on the Indian List.

To remove misapprehension, I may state that I served from 1840 to 1853 in the 43rd Regiment, when I attained my Majority by purchase in the ordinary course of regimental promotion. I received a Brevet Lieutenant-Colonelcy for service

Notes by Major-General Balfour—*continued.*

9. As regards myself, Sir Percy Herbert considers that I ought to stand nineteenth on the list of Artillery Officers who are Major-Generals, instead of twelfth, and that General St. George ought to stand above me—viz., twelfth—instead of below me, as fourteenth.

10. Our respective claims may be judged of from the following statement :—

I entered the Artillery 2½ years before, and became a First Lieutenant of Artillery one year before, General St. George joined the Artillery Corps; I was a Captain in the Army before he attained the rank of Regimental Second Captain, and became a Field Officer ten years before he reached that rank. It was simply owing to the fact of the gradations in the ranks of the Royal Artillery being more favourable to the regimental rise of the Officers of that Corps than the gradation of the Madras Artillery, that General St. George reached the grade of Lieutenant-Colonel before I did, and consequently became a Colonel before myself.

11. It appears to me therefore, that I have the primary right to complain of supersession, and that my subsequent accidental rise as senior in the list of Major-Generals, has been only the recovery of ground which I lost by General St. George having previously superseded me.

II.

1. In reference to the statement contained in the Memorandum, that so far back as 1807 the Duke of York (then Commander-in-Chief) claimed protection for British Officers from supersession, and that the Government of the day took steps to remedy the evil, I may briefly sketch out the relations that the Officers of the British and Indian Armies have borne to each other, from the earliest period of British rule in India.

2. From the first, the British Officers employed in India demanded priority of rank over Indian Officers, just in the same way as in America they claimed to be the superiors of the "Continentals" such as Washington.

3. Indian Officers of long service and experience thus found themselves superseded by young Officers, fresh from England; so that it was currently said, that a campaign in St. James's Street was more profitable than ten campaigns in India; and innumerable duels took place in consequence of this supersession.

4. In 1788 this state of things was terminated by the rule that the Officers of both Services should rank according to date of commission; but as promotion in India was very backward, old Officers served under young ones.

5. In 1796, the Court of Directors, with the concurrence of the Government of the day, and especially of Pitt and Dundas, formed the Indian Army into Regiments of Cavalry, Artillery, Engineers, and Infantry, and provided for the rise of all Officers through all the different ranks, by seniority, and in succession to vacancies in establishments, from the junior grade in each Regiment to the rank of Regimental Lieutenant-Colonel and Colonel, and thereafter to the Army rank of General.

6. In 1804, the Duke of Wellington (then Sir Arthur Wellesley), put forward a memorandum, stating that Lieutenant-Colonels of the Indian Army passed from the rank of Lieutenant-Colonel to that of Colonel in a shorter time than Officers of the British Army.

7. This was the obvious effect of there being a larger number of Lieutenant-Colonels in the British Army, in proportion to other ranks, than in the Indian Army; besides which the Colonels of the Indian Army were so old before attaining that rank that casualties were many.

8. On the other hand, however, the openings for rising to the grade of Lieutenant-Colonel were more favourable to some British Officers than to those of the Indian Army; and thus, on the whole, Indian Officers had a greater length of service than British Officers before attaining the grade of Lieutenant-Colonel.

9. On Sir Arthur Wellesley's return to England from India, he urged on the attention of the Duke of York the subordination of Indian Officers to British Officers; and the result was, that in 1807, the restrictive measures referred to by Sir Percy Herbert were carried out in the following manner.

---

in the Kaffir War, on the 28th of May, 1853, together with several other officers recommended for the like distinction.

While serving with the Army in the Crimea, I was again recommended for promotion, and was made Aide-de-Camp to the Queen, with the rank of Colonel in the Army in June 1855.

In 1858, in order to remedy a grievance caused by the Warrant of 1854, all Lieutenant-Colonels before November 1854 were given the rank of Colonel, and their commissions ante-dated 28th November, 1854.

By this arrangement I was put back to the original place I held as a Lieutenant-Colonel, lost the promotion given me when I was made Aide-de-Camp to the Queen in June 1855, and was more than a hundred steps further removed from the rank of Major-General.

I did not therefore "attain the rank of Colonel in November 1854." And the ante-dating of my commission in 1858 to November 1854 was an injury to me instead of an advantage, as implied by the paragraph under reply.

9. I never "considered" in what position General Balfour ought to be. I made every endeavour to state my case in a general way, and to avoid personal remarks and reflections.

11. Quicker promotion in one regiment than another is not "supersession."

General Balfour has "superseded" General St. George, not "by an accidental rise," but by special advantages given to the Officers of the Indian Army.

II

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9. Sir Arthur Wellesley, while in India, and upon his return, protested against the supersession of British by Indian Officers.

The writer gives no authority for the statement in the last paragraph of this section, "that he urged on the attention of the Duke of York, the *subordination* of Indian "Officers to British Officers."

Notes by Major-General Balfour—*continued.*

III.

1. The order of 1807 ruled that, on a vacancy occurring in the fixed number of Regimental Colonels of the Indian Army, the senior Lieutenant-Colonel, instead of succeeding to the vacancy as a substantive Colonel, as had hitherto been the case under the guarantee of 1796, should in future succeed to the regimental vacancy, and bear the designation of *Lieutenant*-Colonel Commandant instead of *Colonel*-Commandant; that is to say, his rank should be Colonel in the regiment, but only Lieutenant-Colonel in the Army.

2. There has been no other instance in any military Service, of Officers being treated in this manner. It is true that the brevet rank system, under which Officers of the British Army bear a higher rank in the Army than in their regiment, is not understood by the French Officers; but the practice of keeping Indian Officers in a lower Army grade than their regimental grade, would have excited more wonder.

3. In the course of years, the effect of this order began to be felt. In 1824, so large a number of the Senior Officers were Lieutenant-Colonels Commandant, that the effective Colonels of the Indian Army were but few, and the Generals fewer.

4. In 1829, after repeated representations, the right of rising to the rank of Army Colonel by regimental seniority as established in 1796, was restored to the Indian Army.

5. In 1834, as stated by Sir Percy Herbert, Lord Hill interfered to interrupt the rise of Indian Officers; and during the three following years measures were ordered, with a view as stated, to regulate the rise of King's and Company's Officers, or rather to stop the promotion of the Indian Officer.

6. In 1837 the rivalry between the two Armies was in a degree put an end to by the following simple expedient:—

7. The rise of Lieutenant-Colonels to the rank of Colonel in India was made dependent, both as regards Queen's and Company's Officers, on the succession to the grade of Regimental Colonel of the senior Lieutenant-Colonel of Bengal Infantry.

8. On that Officer becoming entitled to succeed to a vacancy amongst the Regimental Colonels of Infantry, all other Lieutenant-Colonels throughout India—whether of Queen's or Company's Service—who were senior to that Officer as Lieutenant-Colonel,—also became Colonels.

9. By the operation of this rule some Officers of the Queen's Service attained the rank of Colonel in India whilst still young; and not being in receipt of off-reckonings, they were allowed to remain with their regiments, or to hold Brigade or General Commands, after obtaining the rank of Colonel.

10. Only few Indian Officers derived the same benefit; for, practically, the Colonels of the Indian Army were nearly all Colonels of regiments, who being in receipt of off-reckonings, were disqualified by position, as well as by age, from holding either a regimental or General command.

11. So fully was this equalisation of rank carried out, that I have seen an instance of a Major-General being allowed to retain command of a Queen's regiment, after being advanced to that grade in order to keep pace with Indian Officers, who though juniors as Lieutenant-Colonels had superseded the British Colonel by becoming Major-Generals.

IV.

1. In 1854, the promotion difficulties were revived by a change in the Army system of promotion being ordered for the British Army, and extended to the Indian Army.

2. For many years previous it had been the practice for the Sovereign to advance Officers to higher rank in the Army by issuing general Brevets; whereby Officers of the grades from Lieutenant-General to Captain obtained a step in rank, provided they had held rank in the grade for the period of years specified in the order, as qualifying for advancement.

3. The last general Brevet was issued in June 1854, and was purposely framed on a liberal scale, so as to promote Officers of short standing as Lieutenant-Colonels, to the rank of Colonel; and thus numbers of the higher ranks of Officers were created at one date.

4. This was preparatory to the abolition of the system of rising in this general manner.

Replies by Major-General Sir Percy Herbert—*continued.*

III.

5. In this paragraph the writer has misquoted me, and, I venture to think, has mis-stated the action of Lord Hill.

Lord Hill's letters are doubtless open to the inspection of the Committee.

IV.

Notes by Major-General Balfour—*continued.*

5. In November 1854 the new system came into operation, under which rise in Army rank was granted in succession to vacancies occurring amongst a fixed number of General Officers.

6. In that year (1854) the establishment of Generals was fixed as below :—

Cavalry and Infantry of the Line		234
Ordnance Corps	Royal Artillery 32	48
	„ Engineers 16	
	Total	282
Royal Marines		10
Indian Army		220
	Grand Total	512

7. Thus, on a casualty occurring amongst the Generals, the Senior Officers entitled to succeed to the grade of Colonel, Lieutenant-Colonel, Major, and Captain, were respectively advanced a step in rank.

8. It was under the operation of the new conditions on which the first promotions were made, that Sir Percy Herbert, although only a Lieutenant-Colonel of May, 1853, became a Colonel on the 28th November, 1854 ; and General St. George, though he had only attained the rank of Lieutenant-Colonel in February, 1854, became a Colonel on the same date, 28th November, 1854.

V.

It appears, judging from incidental remarks in the Reports on Promotion of the Commissioners of 1854 and 1858, that the number of Generals assigned to the several branches of the Army, had some relation to the number of combatant Officers.

The number of Officers in the Artillery was 692, and for these 32 Generals were allowed ; being a proportion of 1 to 21 Officers.

The Royal Engineer Officers were 336 in number, and for these 16 Generals were allowed, giving also 1 General to 21 Officers.

The number of Officers in the Cavalry and Infantry was 4,833, for whom 234 Generals were allowed, giving nearly the same proportion of 1 to 21 Officers.

For the Indian Army, however, comprising 5,400 Officers, only 220 Generals were allowed, being in the proportion of 1 General to 24 Officers.

Moreover, the distribution of this number of Generals into the three grades was unfavourable to the Indian Army.

In the Marines one-half of the number of Generals allowed were Full Generals and Lieutenant-Generals, and the other half Major-Generals.

The same proportion was observed in the Artillery and Engineers, and a little more favourable in the Cavalry and Infantry of the Line.

In the Indian Army, however, the number of the two superior grades of Generals was only about half that of the Major-Generals, as will be seen by the following Table :—

	Artillery.	Engineers.	Cavalry and Infantry.	Total.	Marines.	Indian Army.
Generals	6	3	50	59	2	25
Lieutenant-Generals ..	10	5	70	85	3	50
Total	16	8	120	144	5	75
Major-Generals	16	8	114	138	5	145
Total	32	16	234	282	10	220

The operation of the more favourable scale on which the grades of the General's rank is fixed for the British Army, will be clearly seen by contrasting the position now occupied by a few Officers, formerly in the Indian Army, with that which they would have held, if they had not been transferred from the Indian to the British Army.

8. In the last paragraph the writer implies that the arrangements of 1858 were beneficial to myself. A reference to the Army Lists will show that the anti-dating of my Commission as Colonel to the 28th of November, 1854, retarded my promotion to the rank of Major-General by about four years, and deprived me of the promotion given me for field service in the Crimea.

V.

No Remarks.

Notes by Major-General Balfour—*continued.*

I find that four Officers of the late Indian Army—Carmichael, Grant, Vivian, and Wyllie—have for seven years past held the rank of Lieutenant-General in the English Army; whereas had they continued on the Indian List they would only have attained that rank some time later. Again, Major-General Hale, who was about a year ago promoted to the rank of Lieutenant-General, would, if still on the Indian List, have stood low down on the List of Major-Generals, and would have had no chance of advancement to the grade of Lieutenant-General within the next few years.

VI.

1. I now proceed to examine the accuracy of Sir Percy Herbert's statement, that no supersession was allowed in the Royal Services after an Officer had once attained the rank of Colonel.

2. According to Hart's Army List it appears, that Sir Percy Herbert was senior as Lieutenant-Colonel to all the 10 Generals of Royal Marines except three, and senior as Colonel to all excepting two; so that he has now been superseded by one full General of Marines, four Lieutenant-Generals, and six Major-Generals.

3. If it be said that the Corps of Royal Marines is an exceptional force, I turn to the old Royal Engineers. In that Corps there are two Lieutenant-Generals and six Major-Generals now senior to Sir Percy Herbert in the list of Generals, who are his juniors in the grade of Lieutenant-Colonel. Five of these have the same date of rank as Colonel as Sir Percy Herbert, but, being junior to him as Lieutenant-Colonel, they necessarily stood below him on the gradation list of Colonels. He has now however been superseded by them in the list of Generals.

4. I can also show that Sir Percy Herbert has been superseded by the old Royal Artillery Officers.

5. It will be seen by the Gradation List that there are 10 Generals of the Artillery now senior to Sir Percy Herbert on the list of Generals, all of whom were his juniors in the grade of Lieutenant-Colonel, and only six of whom had the same date of rank as Colonel.

6. The senior of these 10 Generals of Artillery attained the rank of Major-General three years before Sir Percy Herbert.

7. According to Sir Percy Herbert's theory, of standing in the Gradation List of Generals being regulated by the date of rank as Colonel, I may mention that there is an Officer who entered the Army about the time that Sir Percy Herbert was born, who on this view of the case ought still to be only a Colonel in the Army, instead of standing high on the Gradation List of Major-Generals of the British Army.

8. As regards Major-General Sir D. Wood, of the Royal Artillery (whom Sir Percy Herbert represents to have suffered supersession by Officers of the Indian Army), it will be seen by reference to the Army List, that this Officer has himself superseded a number of British Officers of Infantry and Cavalry, who are senior to him in the rank of Colonel.

9. The case of Major-General Sir F. Chapman, of the Royal Engineers, who is also stated to have suffered supersession by Indian Officers, is an instance of the extent to which supersession takes place in the British Service; this Officer having superseded in the rank of Major-General a number of Officers of the Cavalry, Infantry, and Artillery, who are senior to him in the grades of Lieutenant-Colonel and Colonel.

10. In connection with the recent supersessions of Officers of Infantry and Cavalry by Officers of the Seniority Corps (Artillery, Engineers, and Marines), I would call attention to the supersessions that these Officers suffered in former years, by the Officers who obtained promotion by purchase.

VII.

1. There is an inaccuracy in Sir Percy Herbert's statement which requires to be pointed out.

2. In the 2nd, 3rd, 4th, and 5th paragraphs of the Memorandum, Sir Percy Herbert asserts that the measures adopted in 1807 by the Duke of York, as also those advised by the Duke of Wellington and Lord Hill, and subsequently carried out, were all intended to protect British Officers from supersession similar to that of the present day; and in the last paragraph of his Memorandum he claims that seniority be regulated by the rank of Colonel.

VI.

1. I am at a loss to discover in my Memorandum the passage to which the writer refers. What I can state is, that prior to the abolition of promotion by general Brevets, no supersession of an Officer, after he had attained the rank of Colonel, was permitted. Since then, by the promotion of Officers to the rank of Major-General on three separate Lists, one for the Engineers, one for the Artillery, one for the Marines, Infantry, and Cavalry, some supersession has taken place; the arrangements made having been disadvantageous to the Officers of the Infantry and Cavalry.

I apprehend that Her Majesty may reconsider that arrangement whenever so advised, and that at any rate it cannot be stated in justification of British Engineer Officers being superseded by Indian Engineer Officers, of British Artillery Officers by Indian Artillery Officers, and of British Officers of Infantry and Cavalry by Indian Officers of those arms, in a far more flagrant degree. Neither does it justify the supersession of the Indian Staff Corps Officers by their juniors on the Indian List.

I beg to draw attention here to the scrupulous care with which the writer of these notes has avoided all reference to the supersession of the Staff Corps Officers by those on the Indian List, which is inevitable under present arrangements, as stated in paragraphs 22, 40, 45, and 46, of my Memorandum.

VII.

1. The writer refers to an inaccuracy in my statement. I think I can explain it.

Prior to 1854, promotion from Lieutenant-Colonel to Colonel, and then to Major-General, was by seniority on one general List for all Branches of both Armies, with very trifling exceptions, to which it is not necessary now to refer.

In 1854, promotion from Lieutenant-Colonel to Colonel was given for certain qualifying services, irrespective of seniority. This new rule extended to all Branches of both Armies.

Promotion from Colonel to Major-General remained, as before, by seniority, the only exception from which rule of seniority arose from the division of the general List of Colonels

Notes by Major-General Balfour—*continued.*

3. On referring to the records of previous days, it will however be seen, that the supersession intended to be guarded against, was in the rank of Lieutenant-Colonel.

4. It was formerly maintained that when once an Officer became a Lieutenant-Colonel, he was placed in a gradation list rising by seniority to Colonel and General and thereby became secure from all supersession, except by the appointment of Lieutenant-Colonels to be Aides-de-Camp to the Queen; and these appointments, being few in number and made with consideration, caused but little inconvenience.

5. This seniority principle was however set aside, on the advice of the Commissioners of 1854 and 1858.

6. It was found that the protection afforded to Officers on obtaining the rank of Lieutenant-Colonel, to rise by seniority to the grade of Colonel and Major-General, worked injuriously to the public service; and that their succeeding to those grades virtually by seniority, was objectionable.

7. On the advice of the Promotion Commission the Queen ordered, that seniority advancement from Lieutenant-Colonel to the rank of Colonel should only follow on three years' qualifying service in certain situations.

8. The period was extended to five years, on the advice of the Commission of 1858, on account of the rapid rise of so many Lieutenant-Colonels to the rank of Colonel. So peculiar, however, were the appointments qualifying for promotion to Colonel after five years' service as Lieutenant-Colonel, that the seniority claim of protection against supersession after reaching the rank of Lieutenant-Colonel, was practically set aside, and some Lieutenant-Colonels were then superseded.

9. It was also recommended by the Commissioners of 1854 and 1858, that Officers should be selected from the grade of Colonel to fill certain appointments, in which they should have the rank of Major-General, and that after a certain period of service this rank should be made permanent.

10. Thus, the claim of rise by seniority after attaining the rank of Lieutenant-Colonel was set aside in the British Army in 1854, and a few years later changes of a sweeping character were made in Her Majesty's Army of India by order of the Imperial Government.

VIII.

The above statement also shows that the arrangement made in 1854 in respect to the number of Generals for the East India Company's Army was not favourable to the Indian Officers. It is only in consequence of the changes subsequently made in the constitution of the Indian Army, that the Officers escaped being superseded to a great extent by the Officers of the British Army; but still, on these latter ultimately suffering some supersession, the cry of protection is at once raised.

It may be useful here to examine into the changes which have led to the supersession of British Officers by Indian Army Officers.

In 1854, when the distribution of General Officers was made, the Indian Army was still the East India Company's Forces. In 1858 the Act was passed, placing the Government and Army of India under the direct rule of the Queen, and they were thenceforward constituted Her Majesty's Indian Government and Her Majesty's Indian Military Forces, instead of being called the Government and Army of the East India Company.

The first change made in the organization of the Indian Army, was in respect to the Indian Artillery.

This branch had since 1796 been officered on an equality with the Infantry and Cavalry of India in respect to grades and numbers of Officers, with a view to prevent jealousies between the Officers of the respective branches of that Army.

In 1858, under orders from Her Majesty's Government, with a view as was stated, to assimilate the Indian Artillery to the Royal Artillery, the rank of Major was abolished by being converted into that of Lieutenant-Colonel, and the rank of second Captain was added. The assimilation in respect to the grades and numbers of Colonels and Lieutenant-Colonels was however withheld.

In 1861, orders emanating from the Imperial Government were sent out to India, directing an entire subversion of the organization of the Indian Army.

into separate Lists for promotion. This division of Lists, although not intended to do so, has naturally led to some cases of supersession; but with this explanation the arguments of the Duke of York, the Duke of Wellington, and Lord Hill, against the supersession by their juniors of Officers in the rank of Lieutenant-Colonel and Colonel, apply equally now to their supersession in the rank of Colonel.

The claim therefore to rise by seniority from the rank of Colonel to Major-General was not set aside in the British Army by the Warrant of 1854.

10. The writer proceeds to say in the last paragraph of Section VII, that a few years later than 1854, "changes of a sweeping character were made in Her Majesty's Army of India by "order of the Imperial Government."

In this paragraph the writer again admits that the grievance of which I complain arises out of changes made since the transfer of the Government of India, and therefore is in no way guaranteed by the Act of 1858.

VIII.

No Remarks.

Notes by Major-General Balfour—*continued.*

The changes then made are now commonly known as the Amalgamation Orders for the British and Indian Armies; but in point of fact, the separation is now more marked than before.

IX.

The origin of these changes was as follows :—

In 1860, Sir Charles Wood, then Secretary of State for India, entered into communication with Major Norman of the Indian Army, who was at home on leave.

Following on this correspondence came the appointment of a Committee to draw up a plan for the reorganization of the Indian Army. The president, General Lord Hotham, and a majority of the Committee amongst whom was General Sir C. Yorke, a member of the present Committee, belonged to the British Army; and there were only three Officers of the Indian Army, one of whom was Major Norman.

The report of the Committee was approved by all the British Officers, and, although one of the Indian Officers protested against the scheme, it was adopted by Sir Charles Wood; and, as already stated, at the beginning of the year 1861 Orders were sent to the Governor-General to carry out the proposed changes.

The supersession that has since taken place is attributable to these orders. It should be observed that Major-General Norman and other Officers have derived great benefits therefrom.

As stated by Sir Percy Herbert, this Officer who was only a Lieutenant in 1857, is now a Major-General, senior to Officers who were Lieutenant-Colonels in that year. Major-General Norman's regimental position is still 4th Captain in the Cadre of the 31st Regiment of Bengal Native Infantry. But he is an Officer who can show service in many battles and actions.

It should be observed that Colonel Wetherall, an Officer of nearly the same standing and service as Colonel Greathead, (the Officer mentioned by Sir Percy Herbert as being now superseded by General Norman,) was a member of the Committee who recommended the changes that have led to supersessions.

The operation of the measures proposed by this Committee ought to have been well understood by the Home Government before any action was taken; for as far as appears from the records that have been produced, the Orders were issued without consulting the Government of India.

I believe, but it is not shown in the published Official Records, that the changes received the approval of the Horse Guards.

If it be urged that it was impossible to forsee the result of the Orders sent out in 1861, I may mention that it was to some extent foreseen. It was stated before the Commission (of which I was a member) assembled by the Government of India in Calcutta to draw out the Rules for giving effect to the Orders received from England, that the changes were of such a character that the game of leap-frog must commence the moment they came into operation, and that few would see the end of the game. This anticipation has proved correct.

X.

Supersession has been increased by the further changes in the Indian Army that were subsequently to 1861 ordered by the Imperial Government.

As already stated, the Establishment of 220 Generals fixed in 1854 for the Indian Army, was intended to meet the claims of the four Branches (Artillery, Engineers, Cavalry, and Infantry), proceeding on the long established rule, of the senior Army Colonel in either of these Branches succeeding to a vacancy in the grade of General.

The constitution of the Indian Army was changed by the Amalgamation Orders of 1861. By the new rules a large body of Officers were enabled to rise to the rank of Colonel after fixed periods of services, instead of rising, as hitherto, only in succession to vacancies in the fixed Establishment. The rule of the succession of the senior Colonel by seniority to one of the vacancies in the Establishment of 220 Generals was, however, still left in force. That is, the

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IX.

No Remarks.

X.

No Remarks.

succession to vacancies in the fixed Establishment of Generals, continued as before, common to all Branches of the Indian Army.

It became apparent that the rise of the Staff Corps Officers to the grade of General, would be delayed by the Colonels of Artillery and Engineers having this right to succeed to the General's grade; the following arrangements having been ordered, openings were thereby afforded for Colonels of the Staff Corps and Indian Army to become Generals.

On the 1st January, 1862, a Royal Warrant was issued whereby the succession to the grade of General was altered. I have enquired into the history of this Warrant, but with the exception of a pencil memorandum by the late Mr. Sidney Herbert (who was at that time Secretary of State for War) nothing has yet been found on record showing why it was issued. The subsequent Warrant of 15th June, 1864, is mainly a republication of the Warrant of 1862, made with a view to correct a mistake.

The number of Generals supposed to be allowed for the 12 regiments of European Cavalry and Infantry transferred to the British from the Indian Army, was directed by these Warrants to be transferred from the Indian List, to the List of Generals for the Cavalry and Infantry of the British Army, with an addition of one fourth.

It was also directed, that the number of Generals considered to be assigned to the Indian Artillery and Engineers, should be placed on separate lists, and withdrawn from the Indian Lists; a small increase being also allowed.

By these changes the Indian List of Generals was reduced from 220 to 173.

XI.

The operation of these changes will at once be seen by referring to the promotions of Colonels to the rank of General, on the Indian List.

The removal of the Generals of the Artillery and Engineers, European Infantry, and European Cavalry of the Indian Army from the Indian Lists to the Home Lists, proved favourable to Officers of the Staff Corps and Indian Army.

The rapidity of rise to the rank of General from Colonel has in consequence been considerable. For instance, Norman, now a Major-General of half a year's standing, only became a Colonel on the 8th September, 1863; that being the date of his appointment as Aide-de-Camp to the Queen.

In order to show the difference between the rise of Staff Corps Officers and those of the Indian Artillery to the grade of Major-General, I subjoin a Table showing the dates of rank in the several grades, of two Officers of the Staff Corps who stood next to each other in the Indian Gradation List of Colonels, and of two Indian Artillery Officers who were then seniors on that List.

The two Staff Corps Officers are Stewart and Norman; and the Artillery Officers are Simpson, of the Royal (Madras) Artillery, and Johnson, of the Royal (Bengal) Artillery.

	Stewart.	Norman.	Simpson.	Johnson.
2nd Lieutenant or Ensign ..	12 Oct. 1840	1 Mar. 1844	17 June, 1824	10 June, 1842
Lieutenant	3 Jan. 1844	25 Dec. 1847	25 „ „	3 July, 1845
Brevet-Captain	.. ..	1 Mar. 1859	17 „ 1839	10 June, 1857
Captain	1 June 1854	2 Dec. 1860	26 Feb. 1840	23 „ „
Brevet-Major	19 Jan. 1858	3 Dec. 1860	11 Nov. 1851	5 July, „
Major	18 Feb. 1861	1 Mar. 1864	14 Aug. 1855	.. ..
Brevet-Lieut.-Colonel.. ..	20 July, 1858	4 Dec. 1860	23 July, 1858	19 Jan. 1858
Lieut.-Colonel..	12 Oct. 1866	.. ..	27 Aug. „	24 Mar. 1865
Brevet-Colonel	20 July, 1863	8 Sept. 1863	.. ..	19 Jan. 1863
Colonel	.. ..	.. ..	18 Feb. 1861	.. ..
Major-General..	24 Dec. 1868	23 Mar. 1869	11 Dec. 1868	.. ..

It will be observed that three out of these four Officers received Brevet rank for service in the field. Major-General Norman rose from Lieutenant to Lieutenant-Colonel in two days; but still he had at the time a longer total service than Sir P. Herbert could show when he became a Lieutenant-Colonel. But General Simpson rose to the rank of Major-General by regular Regimental and Army succession; but the rise to the grade of Major-General was in these cases very unequal.

XI.

No Remarks.

Notes by Major-General Balfour—*continued.*

The removal of the Indian Artillery and Engineer Officers from the General Indian Gradation List opened out the way for the promotion of the Staff Corps and Indian Officers.

The result is, that Major-General Simpson though senior in the Service to Stewart by 16 years, and, to Norman, by 20 years, and two years senior to both as Colonel, has now been superseded in the rank of General by both; whilst Johnson, though senior to both Stewart and Norman in the grades of Lieutenant-Colonel and Colonel, has no prospect of attaining the grade of General for several years to come. If these two Officers had been kept on the Indian List, both would have been promoted in 1868.

Moreover, Major-General Simpson—the senior of those who were thus superseded by Staff Corps Officers—is of longer service than two full Generals and 14 Major-Generals of the old Royal Artillery.

The above is only one instance of the injury sustained by the Indian Artillery.

According to Hart's Army List, no less than 18 Indian Artillery Officers have been superseded in the rank of Major-General by Staff Corps and Indian Army Colonels, although they had prior dates of commissions in the latter rank.

Had these 18 Colonels of Indian Artillery remained on the Indian List, they would all ere this have succeeded to the rank of Major-General; and would then have vacated their Regimental positions; the Regimental vacancies being filled up by promotions in the respective corps.

The pecuniary loss sustained by the Regimental Officers of Indian Artillery, in consequence of being deprived of these promotions to the grade of General, may be calculated at 15,000*l.* per annum; and the loss that must be sustained by the Regimental Officers whose advancement is thus delayed, before these 18 Officers vacate their positions in the Regiment in consequence of promotions to the rank of Major-General, must be very considerable in a long course of years.

XII.

I cannot close this paper without stating that it appears to me that the question really at issue is protection to the Purchase System; the Officers of Infantry and Cavalry of the British Army can obtain advancement to the rank of Lieutenant-Colonel by means of money, and through other influences.

Major-General Sir Percy Herbert is an instance of influence in securing promotion. It is true, he is a distinguished Officer, and has good Field service to show; but it was not by that service alone, but by the aid of money and influence, aristocratic and political, that he attained rank as Lieutenant-Colonel, and then rose to be Colonel in fewer years than I, by seniority, attained the rank of Regimental Captain.

The rank of Lieutenant-Colonel of Infantry and Cavalry can still be attained by purchase, and advancement to the grade of Colonel is then secured by a few years' service. Sir Percy Herbert claims protection for Officers as in former years in the grades of Colonel when placed in a position to rise by seniority to the grade of General where money and influence can no longer operate.

The seniority or non-purchase Services of England were not however protected in prior years against supersession by Officers in the Purchase Branch. In fact, they are not even now protected; as will be seen in the course of a few years, when the Officers of these Corps will be superseded, if purchase is continued.

The Officers of the Indian Army, who in former years obtained advancement by seniority, suffered from supersession by the purchasing Officers of the British Army.

It now happens that the Indian Army has rules for a class of Officers rising in rank, whereby advancement is secured to these Officers by length of service in different grades.

An Indian Staff Corps Officer is certain of promotion through the grades of Captain, Major, Lieutenant-Colonel, up to Colonel by service in the several grades. The latter rank can be attained in 31 years.

No doubt this is a favourable gradation, but even then an Officer must be 26 years in the service before he obtains the grade of Lieutenant-Colonel; that is, double the time that Sir Percy Herbert required to reach that rank, through the aid of money influence, and Service combined.

XII.

The writer finishes his Notes with a little essay against Promotion by Purchase. He is of course at liberty to take his own view of that system, but it appears to me to be irrelevant to the question at issue, and its introduction has the appearance of an endeavour to withdraw attention from the merits of the case under consideration. The writer is well aware that his argument, had it any value, does not apply to the supersession of the Officers of the British Artillery, British Engineers, or the Indian Staff Corps, in which three Corps the system of Purchase does not exist.

The Purchase system is upheld by those in favour of it as a means of obtaining a sufficient flow of promotion for young, and of retirement for old Officers, to secure efficiency in point of age and activity, for the public service.

The Legislature have it in their power to attain the same result, in a degree, by giving a large amount of retiring pensions. They, however, show no disposition to vote the money.

Whether the system is good or bad, so long as it continues, faith ought to be kept with Officers, in accordance with the rules of promotion under which they entered the service. The transfer to the British Army of a large body of Indian Officers, and subsequently giving to the latter extraordinary promotion, whereby they supersede their seniors in the British Army, involves an injustice and breach of faith to the British Officers, that Her Majesty's Government is bound to rectify.

In drawing up my Memorandum, and in replying to these Notes, I have endeavoured to avoid all personal allusions to individual Officers, or any reflection upon the value of their services, or whether their promotion was fairly earned or not.

I have only mentioned the names of Officers when necessary to illustrate an argument.

General Balfour, in his Notes, repeatedly admits what is sufficient for my case, and which a reference to the Army Lists prove, that the Indian Officers are superseding the British Officers; and, further, that such supersession arises from Regulations made since the passing of the Act of 1858, and can therefore be in no way guaranteed by any Clause in that Act.

PERCY E. HERBERT, Major-General.

Notes by Major-General Balfour—*continued.*

Infantry and Cavalry	275
Old Royal Artillery	32
New Royal Artillery	26
Old Royal Engineers	16
New Royal Engineers	12
Marines	13
Indian Army ..	173
Total ..	547

It is difficult to see how supersession in the grade of Major-General can at present be prevented. There are seven lines of Generals, as entered in the margin, and advancement thereto is guaranteed to the Senior Colonel in each line. But five of these lines are Seniority Corps, one line is mixed partly by seniority and partly by fixed periods of service, and the seventh line is by purchase.

I submit that the remedy for the present grievance about promotion to the rank of Major-General, can only be devised after the buying and selling system of the British Infantry and Cavalry is put an end to.

G. BALFOUR, Major-General,
Royal (Madras) Artillery.

War Office,
21st Sept., 1869.

APPENDIX H.

Sir, India Office, S.W., 1st September, 1869.

I AM directed by the Secretary of State for India in Council to forward, for the information of the Secretary of State for War, two letters* (copies) from Mr. Milton, the Secretary of the Committee lately appointed to consider the relative position of the Colonels of the British and Indian Armies.

2. In one of these letters the Committee ask for a Return, shewing the names and services of the Colonels, Major-Generals, and Lieutenant-Generals of Her Majesty's Indian Forces, who have been superseded by any Officers of Her Majesty's British Forces, since 28th November, 1854, with the dates of their first commissions, their promotion to Lieutenant, and to each higher rank.

3. Upon this demand, the Duke of Argyll desires me to observe that the number of Officers superseded, on the one side or the other, can only be ascertained by a careful impartial comparison of lists of all the Officers of each Service who attained to those grades in either Service since the date mentioned; and that such lists can only be obtained in an authentic form from this Office for the Indian Army, from the War Office for the British Army, that, inasmuch as one very important point to be determined by the Committee itself is the supersession that has taken place on either side—its nature, degree, and consequences. His Grace would propose that it be suggested to the Committee to obtain, in most complete detail, from each Department, all necessary information as to the names, length of service, &c., of Officers, and to deduce the nature and amount of supersession from a careful comparison of those statements.

4. The Duke of Argyll will cause complete statements to be prepared with this view, giving the names, dates of first and all subsequent commissions of every Officer of the Indian Army, who attained the rank of Colonel in that Service since November 1854, and I am to suggest that a similar Return be furnished to the Committee by the War Department, in respect to Officers of the British Service.

5. In the second letter, the Committee request to be furnished with copies of all orders and regulations promulgated by the Government of India, relative to the promotion of Officers of the Indian Army, subsequent to the 2nd August, 1858.

6. They also forward a copy of a memorandum which has been furnished by Major-General Sir Percy E. Herbert, K.C.B., on the subject of such supersession, and request that the Committee may be furnished with a statement of such facts as may be advanced on the part of Officers of Her Majesty's Indian Forces on the other side; and that they may be informed whether the list of Indian Officers therein detailed as having superseded British Officers, is accurate and correct.

7. With regard to the first point, I am instructed to forward, for the information of the Committee, copies of papers, noted below,† bearing upon the subject, and also a copy of the second edition of Cochrane's Code, in which, from page 401, will be found the rules and regulations.

8. With regard to Sir Percy Herbert's paper, I am to observe that the names and dates of rank assigned therein to the Officers of the Indian Army are correct. Those of the British Army, and their relative standing towards the Indian Officers, can only be checked by the War Department.

* Dated 26th August, 1869.
† India G.O. No. 632 of 1864, and No. 808 of 1866.

9. I am further to observe that his Grace has no remark to make on Sir Percy Herbert's paper, but has no doubt that it will be carefully considered in all its bearings by the Committee, on which the interests of the Indian Army are specially represented by the two Officers named by this Department.

10. The Duke of Argyll is desirous that the subject should be impartially considered, with a view to justice being done to all, and has no wish to put forward any statement or argument in favour of one side or the other.

11. A short memorandum upon the subject, prepared some time since in the Military Department of this Office, is forwarded for the information of the Secretary of State for War, and for communication to the Committee, should Mr. Cardwell see fit.

12. I am also to forward, for the same purpose, a very useful paper on the general subject of promotion to the higher grades in the two Services, drawn up in this Office in 1866.

I have, &c.,
(Signed) T. T. PEARS, Major-General,
Military Secretary.

The Under Secretary of State for War.

Inclosure 1.

War Office,
26th August, 1869.

Sir,

I AM directed by Sir William James, President of the Committee on the Supersession of British Army Officers, to request that you will cause me to be furnished, for the use of the Committee, with a return showing the names and services of the Colonels, Major-Generals, and Lieutenant-Generals, of Her Majesty's Indian Forces, who have been superseded by any officers of Her Majesty's British Forces, since 28th November, 1854, with the dates of their first commissions, and of their promotion to Lieutenant, and to each higher rank.

In the case of any of the above officers who have retired upon full or half-pay, the dates of their retirement and the number of years they have served as Regimental or Staff Officers should be stated.

I have, &c.,
(Signed) J. MILTON, Secretary.

The Military Secretary,
India Office.

Inclosure 2.

War Office,
26th August, 1869.

Sir,

I AM directed by Sir William James, President of the Committee on the Supersession of British Army Officers, to request that you will furnish me, for the use of the Committee, with copies of all Orders and Regulations promulgated by the Government of India relative to the promotion of officers of the Indian Army subsequent to the 2nd August, 1858.

I am further directed to enclose a copy of a memorandum that has been furnished to the Committee by Major-General Sir Percy E. Herbert, K.C.B., on the subject of such supersession, and to request that you will move his Grace the Secretary of State for India, to cause this Committee to be furnished with a statement of such facts as may be advanced on the part of officers of Her Majesty's Indian Forces on the other side; and that you will further inform me, whether the list of Indian Officers therein detailed as having superseded British Officers, is accurate and correct.

I have, &c.,
(Signed) J. MILTON, Secretary.

The Military Secretary,
India Office.

Inclosure 3.

EXTRACT FROM DESPATCH OF SECRETARY OF STATE, No. 194, OF 17TH JUNE, 1864.

51. The measure by which it was intended that some reduction of establishment should be combined with accelerated promotion has been attended with unequal effect in the several presidencies, and it appears necessary that the inequality should be rectified.

In 1861 the establishment of Regimental Lieutenant-Colonels at the three presidencies was as follows:—

	Cavalry.	Infantry.
Bengal	10	80
Madras	8	58
Bombay	3	35

52. It appears that the officers of the rank of Lieutenant-Colonels accepted the annuities in 1861 in varying proportions for the several presidencies, and that their present relative numbers, including the names of officers of the Staff Corps and new line regiments, vary accordingly, viz., in—

	Cavalry.	Infantry.
Bengal	7	59
Madras	5	39
Bombay	3	23

exclusive of General Officers, who are supernumeraries. It has been determined to apply to the presidencies of Madras and Bombay the same proportionate reduction of officers of this rank as has been effected in Bengal by the annuities, so that the establishment of Lieutenant-Colonels of cavalry and infantry in the three presidencies shall stand hereafter as follows:—

	Cavalry.	Infantry.
Bengal	7	59
Madras	6	43
Bombay	3	26

such establishment being exclusive of Lieutenant-Colonels having the rank of General Officer.

53. I have now to notice the three subjects of complaint which the Commission have considered to be well founded. These are—

1st. The supersession of regimental officers by the promotion of their brother officers under the Staff Corps rules.

2nd. The retention on the cadres of native regiments of the names of officers transferred to the new line regiments; and,

3rd. The arrangements laid down in the Royal Warrant of 1st January, 1862 (as far as they affect the officers of cavalry and infantry of the Indian Army), for regulating the promotion of Colonels of the Indian Army, of date subsequent to the 17th February, 1861, to the rank of General Officer.

54. The Commission are unanimous upon two, and those the most material, of these three points, and Her Majesty's Government, although their own views may not be changed, are, nevertheless, prepared to accept the opinion of the Commission on these questions, and have given their most careful attention to the various measures that have been suggested for meeting and remedying the grievances which, in the opinion of the Commission, appear to be well founded.

55. With respect to the second of the above three complaints, considered by only a majority of the Commission to be well founded, Her Majesty's Government have determined, in deference to the opinion of the majority, that the names of the officers who joined the new line regiments from native cavalry and infantry, including the cadres of the 4th and 5th Regiments of European cavalry, and of the 4th, 5th, and 6th Regiments of European infantry in Bengal, which were formed from native regiments, shall be removed from the cadres of their former regiments, and that promotions shall be made in their places.

These promotions will date from the 18th of February, 1861.

56. The third of the complaints recognized by the Commission as well founded, is the proposed amalgamation of the list of Colonels of the British and Indian Armies, by which it is considered that the advancement of the Indian Officers to the rank of General Officer would be unduly retarded.

57. The effects of the Royal Warrant of the 1st January, 1862, by which the arrangements of the future amalgamation of the field officers of the British and Indian Armies were laid down, is altogether prospective. No promotions have yet been made under that warrant, and there is no difficulty in altering this arrangement.

58. Her Majesty's Government have, therefore, determined so far to modify the provisions of that warrant as to retain the whole of the officers of the cavalry and infantry of the Indian Army on the general list of that service, as before, for promotion to the rank of General Officer.

59. With regard to the promotion of officers of artillery and engineers to the rank of Major-General, the Commission have declared themselves unable to determine the effect produced by the Royal Warrant of 1st January, 1862, upon the prospects which such of these officers as were not Colonels before the amalgamation would have of becoming General Officer; but they state that the change will ultimately, to a small extent, be beneficial to the Ordnance Corps.

60. It is desirable that the officers of these corps, which have become united to the corps of Royal Artillery and Engineers, should as soon as practicable be withdrawn from the list of the Indian Army and placed on separate lists, as is the case with those of the old Royal Corps, who rise to the rank of Major-General on separate lists. It has been determined, therefore, to give to each branch of the Ordnance Corps in India a separate establishment of General Officers, calculated in the same proportion as that which governs the establishment of General Officers of the old Royal Artillery and Engineers.

61. According to this rule, there will be ultimately 26 General Officers allotted to the Indian Artillery, 12 to the Engineers.

62. All artillery and engineer officers, being Colonels in the Army of date prior to 18th February, 1861, will continues to rise on the general list of the Indian Army.

63. Officers of those corps who attain the rank of Colonel in the Army on or after the 18th February, 1861, will rise on the separate lists above referred to towards the allotted establishment of General Officers of each corps.

64. As regards the field officers of the Staff Corps, it is most desirable that they should be brought hereafter on to the general list of the British Army, and that this should be effected with the least possible disturbance of the present rate of promotion in either Service, and it has been determined therefore, to bring on the list of the British Army all Colonels on the Staff Corps whose dates of commissions as Lieutenant-Colonel are subsequent to the 17th February, 1861, leaving all those who attained the rank of Lieutenant-Colonel prior to the formation of those corps to rise to the rank of General Officer on the Indian list. In these measures His Royal Highness the Field-Marshal Commanding-in-Chief has concurred, and a warrant for carrying them into effect, has been submitted to and approved by Her Majesty. I enclose a copy for your information.

Dated 15th June, 1864.

65. It only remains to consider the first of the above three complaints. In the opinion of the Commission, the extensive promotion made under the Staff Corps rules unnecessarily gave superior rank to many of the Indian officers selected for those corps, and caused extensive supersession to the officers remaining with their regiments.

66. It is evident that a complete remedy for this supersession in army rank must be found either in the withdrawal of the rank given to the Staff Corps officers, or in granting such army rank to the officers of the Indian Army as shall restore them to their relative position, as regards the Staff Corps officers, which they held before the formation of those corps.

67. Her Majesty's Government would have been very reluctant to adopt the first of these two courses, which must have been productive of much embarrassment and disappointment to a very large class of deserving officers, while the replacing of those officers in their regiments would not have been without its disadvantages, even to the complainants themselves.

68. It has been considered, therefore, that the only satisfactory course open to the Government is to confer upon the officers of the Indian Army generally, such army rank as shall entirely remove all ground for complaint upon this head, by restoring to all who had been superseded the relative position, as regards the Staff Corps officers, which they held before the formation of those corps.

69. Her Majesty's Government believe that the object in view can be effectually attained by an extension of a system which has for many years existed in India of giving brevet rank by length of service, heretofore applicable only to the promotion of subalterns, and by granting to the officers of the Indian Service army rank under the following rules, the adoption of which has, with the concurrence of His Royal Highness the Field-Marshal Commanding-in-Chief, been determined upon, viz.:—

That all officers whose commissions bear date on or before the 18th February, 1849, shall be promoted to the rank of Captain by brevet.

All officers whose first commissions bear date on or prior to 18th February, 1841, shall be promoted to the rank of Major by brevet; and

All officers whose first commissions bear date on or prior to 18th February, 1835, shall be promoted to the rank of Lieutenant-Colonel by brevet; all such promotions to bear date 18th February, 1861.

After the 18th February, 1861, officers of the several staff corps, and of Her Majesty's Indian Army generally, shall be granted brevet rank under the following regulations:—

After 12 years' standing in the Army from date of first commission, to be Captains; after 20 years', Majors; after 26 years', Lieutenant-Colonels.

On and after the 18th February, 1866, all officers who have served 31 years on full pay, five of which shall have been in the grade of Lieutenant-Colonel, to be promoted to the rank of Colonel by brevet.

70. His Royal Highness the Field-Marshal Commanding-in-Chief has expressed his intention of recommending to Her Majesty that the officers of the British Army serving in India, including the Ordnance Corps, shall have army local rank in India conferred upon them after precisely the same periods of service and under the same rules, special provision being also made in cases where line and Indian officers may serve together elsewhere.

71. It is to be understood that the system of promotion to brevet rank now introduced, will cease in its application to the several grades of the Army on the extinction of those grades among the officers of the Indian Army. Thus, when the whole of the Lieutenants of the Indian Army shall have been promoted to the rank of Captain, the promotion of officers in the Staff Corps to the brevet rank of Captain under the above rule will be discontinued, and so on with the higher grades.

72. Her Majesty's Government have thus endeavoured fairly to meet the complaints which have been addressed either to Parliament or to the Government, and the measures which they have adopted, although not free from some objection, remove the three cases of grievances which the Commissioners reported to be well founded. Her Majesty's Government, however, being anxious to extend to the officers of the Indian Army every boon which can be given consistently with fairness to other branches of Her Majesty's service, and without imposing any undue charges on the revenues of India, have determined on adopting a further measure which will be attended with considerable benefit to the Indian officers.

73. Your Government will have observed that one of the principal complaints made by the officers of the Indian Army related to the retention on the cadres of regiments of the names of officers who had joined the several Staff Corps.

74. The Commission do not consider that this arrangement, necessary as it was, from the circumstances of the case, was an infringement of the parliamentary guarantee.

75. Irrespective of the very great expense which would have been involved in the opposite course, *i.e.*, that of removing those names, and making promotions in their places, a serious objection presented itself, in the very unequal promotion that would have been given in different regiments.

76. The latter objection does not apply to the removal of the names of officers above the rank of Major from the general regimental list of the Indian Armies, and Her Majesty's Government have resolved that the names of officers of the Staff Corps and new line regiments shall on coming into the position of Regimental Lieutenant-Colonel on those lists, be struck out, and that promotion shall be made in their places.

77. Such promotion will be equably distributed, instead of operating unfairly in different regiments and, although some additional expense will be thus thrown upon the finances of India the amount will not be very serious.

78. Her Majesty's Government have not overlooked the large increase which this measure will make in the number of officers of the higher ranks serving in India. It is impossible, however, that any measure which accelerates promotion should not have this effect; and Her Majesty's Government are glad to give this additional proof of the estimation in which they hold the services of the officers of the Indian Armies.

79. In carrying out this resolution it will be necessary to remove from the list of Colonels, with Colonel's allowance, the several officers who have been transferred to the new line regiments, making promotion in their room on the principle laid down in my despatch, No. 320, dated 10th August, 1861, pars. 17 and 18, and in like manner to strike out the names of all officers of the Staff Corps and the new line regiments now borne in italics, upon the list of Regimental Lieutenant-

Colonels of cavalry and infantry in the three presidencies, making promotion in their places up to the establishment laid down in a preceding para. (52). In making promotion in future from the list of Majors to that of Lieutenant-Colonel, the name of every Staff Corps officer, on coming on the list of Regimental Lieutenant-Colonels, will be struck out and promotion made in his place.

Para. 52.
Para. 55.
Para. 69.
Para. 79.

80. You will give the necessary orders for making the arrangements for the prescribed establishment of Lieutenant-Colonels for the three presidencies; for the promotions in the cadres of native regiments, from which officers have joined the new line regiments; for the promotions to brevet rank of the officers of the Indian Army and of the several Staff Corps; and for removing from the list of Colonels with Colonel's allowance, the names of the several officers who have been transferred to the new line regiments, as well as those of all officers of the Staff Corps and new line regiments now borne in italics on the list of Regimental Lieutenant-Colonels of the three presidencies, and you will cause the necessary promotions to be made in connection with these arrangements, and submitted to me for Her Majesty's approval.

81. With this measure, the arrangements as regards the officers of the Indian Army will be closed. The advantages which have been conferred upon the majority of those officers have already been pointed out, and it cannot be doubted that, under the system now established, the officers of the Indian Army will, for the most part, attain to the several regimental grades, including that of Colonel with Colonel's allowance, in a shorter period of service than they would have done had the several Staff Corps not been formed, and had no change in the constitution of the Indian Army taken place. Her Majesty's Government trust that the officers who are affected by these changes will feel that, whilst a reduction of the Indian Army was indispensable, and a regard for the finances of the Indian Empire was an imperative duty, neither of these considerations have prevented the Government from showing that regard for their interests which the gallantry and services of the armies of India deserved.

[G.O., August 4, 1864, No. 632.]

Inclosure 4.

Military. No. 159.

General Orders by the Governor in Council.

Fort St. George,
26th September, 1866.

No. 808 of 1866.

His Excellency the Governor-General of India in Council is pleased to direct the publication, for general information, of the following despatches, received from the Right Honourable the Secretary of State for India:—

India Office, London,
8th August, 1866.

Sir,

Para. 1.

With his Despatch, No. 194, of the 17th June, 1864, Sir C. Wood forwarded, for the information of your Excellency's Government, a copy of the report of a Royal Commission, of which Lord Cranworth was president, and which had been appointed for the purpose of enquiring into certain complaints which had been made by officers of the Indian Army, to the effect that the measures recently adopted by Her Majesty's Government in relation to that Army had been in violation of the assurance of Parliament contained in certain clauses of the Acts 21 and 22 Vic., cap. 106, and 23 and 24 Vic., cap. 100.

2. Your Excellency was at the same time informed of the steps which Her Majesty's Government had taken in consequence of the opinion expressed by the Commissioners in their report.

3. The Commission necessarily turned, in the first instance, to a consideration of the nature and extent of the Parliamentary guarantee and upon that subject expressed themselves in the following terms:—

Para. 34.

"In considering this subject, we must begin by assuming that the word 'entitled' cannot be "understood as referring to rights capable of being enforced in a court of justice. If any such rights "exist, no opinion we may express, can or ought to affect them. We propose, therefore, to assume "that the officers had not against the Company, and have not against the Crown, any such rights. "And the question is, what, on that assumption, is the proper interpretation to be put on the language "of the Act. It could not have been intended to prevent the Crown, if in the interests of India and "of the Empire at large it should deem it necessary, from reducing the numbers of the Indian Army, "or altering its organization. It would have been in the power of the Company to make such reduc-"tions and charges, and a similar power was transferred to the Crown. All we can understand Par-"liament to have guaranteed to the officers is, that in making any such reductions, their interests "should as little as possible be interfered with, and that in any change of organization, the Crown "should, as no doubt the Company would have done, preserve all the rules as to pay, pension, "allowances and privileges, and the like advantages as regards promotion and otherwise, which "existed at the time the Act was passed; or if in any case that should be impossible, then that some "counter-balancing benefit should be given to compensate any advantage which it might be impossible "to retain. When once we have come to the conclusion that what Parliament meant to guarantee "was not a strict legal right, capable of being enforced in a court of justice, we are unavoidably, "from the nature of the subject matter, obliged to adopt less definite principles of construction than "those by which Acts of Parliament are generally to be interpreted. We must consider the language "of the Act in connexion with the subject with which it was dealing, and in that spirit we now proceed "to consider the several memorials referred to us by Your Majesty."

4. The several complaints made by the officers of the Indian Army were classed by the Commission under 13 heads, and they reported that—

In eight cases there had been no infringement of the guarantee.

In three there had been, and in two there might hereafter prove to be an infringement of it.

5. The three measures which that Commission reported to have involved infringements guarantee, were—

1st.—The supersession of regimental officers by the promotion of their brother officers under the Staff of the Corps rules;

2nd.—The retention on the cadres of native regiments of the names of officers transferred to the new line regiments; and

3rd.—The arrangements laid down in the Royal Warrant of 1st January, 1862 (as far as they affect officers of Cavalry and Infantry of the Indian Army) for regulating the promotion of Colonels of the Indian Army of date subsequent to the 17th February, 1861, to the rank of General Officer.

6. The two which they considered to be doubtful in their effect were—

1st.—The regulation by which 12 years is made the period of service in the grade of Lieutenant-Colonel; and

2nd.—The reduction of the number of regimental Lieutenant-Colonels by making promotion in succession to one-half only of the officers of that rank who accepted the special annuities offered to them on retirement in 1861.

7. The measures which were adopted with a view of directly remedying the above declared infringements of the guarantee, were as follows:—

1st.—Placing the officers of the several Staff Corps and of the Indian Army, upon a footing of equality in respect of promotion in Army rank by the introduction of a rule of promotion applicable alike to officers of the Indian Army and of the Staff Corps, by which all officers would obtain brevet rank in the several grades upon completion of certain fixed periods of service (from the date of first Commission), such rule to take effect retrospectively from the 18th February, 1861—the date of formation of the Staff Corps;

2nd.—The removal from the cadres of native regiments of the names of those officers who had joined the new line regiments, promotion being made in their places;

3rd.—Extensive modifications in the Warrant of 1st January, 1869, for regulating the promotion of Colonels in the Indian Army.

8. The above measures afforded, in the opinion of Her Majesty's Government, a direct remedy for those complaints of a breach of the Parliamentary guarantee which had been reported by Lord Cranworth's Commission to be well founded, and in addition to these, and with a view to afford compensation to to the officers of the Army for any possible injury that they might sustain in their prospective promotion, a great and permanent impetus was given to regimental promotion in the three Armies (which had been already greatly accelerated by the grant of special annuities to about 300 officers on retirement), by the adoption of a rule that the names of all officers of the Staff Corps should, on attaining the position of Lieutenant-Colonel on the general (regimental) list of the several presidencies, be struck off and promotion made in their places. At the same time, certain additions were made to the revised establishment of regimental Lieutenant-Colonels in Madras and Bombay.

9. The beneficial effects of the removal of Lieutenant-Colonels from the general list, has been already very sensibly felt in the impulse which it has given to promotion among the officers of the Indian Army.

10. Upon these measures, which were duly carried out by your Excellency's Government, your Excellency observed in your Despatch of 8th November, 1864:—

"It is scarcely possible that extensive changes in the Army should ever be made without "unfavourably affecting the position of some individuals relatively, *i.e.*, as compared with that of some "others, and the instance in question is no exception to this rule. But we think there can be "no doubt that, by the measures ordered in your Despatch, substantial hardship in the matter of "promotion is avoided."

11. On the same occasion, his Excellency the Commander-in-Chief in India, Sir Hugh Rose, made the following observations:—

"Under the measures directed by the Right Honourable the Secretary of State, the chief cause "of complaint, as frequently brought to the notice of Government by His Excellency, *viz.*, 'the "supersession of regimental officers by their juniors of the Staff Corps,' has been removed entirely. "It may, at the same time, be observed that whilst some officers will continue to suffer supersession, "the privileges now conferred on the Army generally are specially advantageous to the officers who "have not joined the Staff Corps, and to those who have been unfortunate in their promotion."

12. After showing how, under the new rule, certain Staff Corps officers will be superseded by officers who have remained with their regiments, Sir Hugh Rose remarked—

"These calculations may not be absolutely exact, as they are taken from an Army List dated "1st April, last; but they suffice to illustrate the favourable working of the new arrangements in "regard to officers who have remained with their regiments, and they show to the satisfaction of "the Commander-in-Chief that the local officers gain very important and solid advantages under "the recently sanctioned regulations."

13. Your Excellency will have observed, however, that an address to Her Majesty was moved and carried in the House of Commons on the 2nd May, 1865, praying that Her Majesty would be pleased "to redress all such grievances complained of by the officers of the late Indian Armies, as "were admitted by the Commission on the Memorials of Indian officers to have arisen by a departure "from the assurances given by Parliament by 21 and 22 Vic., cap. 106, and 23 and 24 Vic., cap. 100."

14. Her Majesty was pleased in consequence to appoint a Commission, composed of the officers named in the margin, who were instructed, with reference to the terms of the above address, to enquire into and examine whether the measures above referred to "are effectual and "sufficient for the purpose of removing such causes of complaint "as have been reported in the terms hereinbefore stated by "the said first mentioned Commissioners to have arisen by a "departure from the assurances given by Parliament, or for

General Sir John Aitchison, K.C.B.
Lieutenant-General Sir Robert Napier, K.C.B.
Major-General Sir S. J. Cotton, K.C.B.
Major-General H. Eyre.
Major-General C. A. Browne.
Major-General D. Russell, C.B.
Major-General Sir W. M. Coghlan, K.C.B.

"the purpose of giving a counterbalancing benefit in any cases where any rules as to pay, pension, "allowances, and privileges, and the like advantages as regards promotion and otherwise, which "existed when the Acts above referred to were passed, have not been retained; and in what respects, "and to what extent, if at all, such measures fall short of what may be required for removing the "causes of such complaints, or for giving such counterbalancing benefit in lieu thereof."

15. I now forward, for your Excellency's information, a copy of the report of this Commission, dated the 14th September, 1865.

16. In carrying out their instructions, the Commissioners state that they have arranged the points upon which they have to submit their opinion in the following order:—

1st.—The retention on the cadres of Native regiments of Cavalry and Infantry of the names of officers transferred to the new Line regiments of Her Majesty's Army.

2nd.—Arrangements for regulating the promotion of Colonels of the Indian Army, of date subsequent to the 17th February, 1861, to the rank of General Officer.

3rd.—The filling up of only half the vacancies occasioned by the retirement of Lieutenant-Colonels upon increased pensions from 31st December, 1861, and the retention of the names of the retired Lieutenant-Colonels upon the regimental gradation lists, in order to regulate subsequent promotions to Colonel with Colonel's allowances.

4th.—The rule under which Lieutenant-Colonels are to be promoted to Colonel, with Colonel's allowance, on the completion of 12 years' service in the rank of regimental Lieutenant-Colonel.

5th.—The supersession of regimental officers by officers of the Staff Corps.

1st Point. 17. Upon these several points they report as follows:—

2nd Point. That the measures adopted upon the first point have been effectual and sufficient;

That they consider the measures adopted in relation to the second point effectual and sufficient, so far as the arrangements connected with the Ordnance Service come within the scope of their enquiry.

3rd Point. 18. Upon the 3rd point the Commission state that, from the views which have been expressed by many of the memorialists, they are of opinion that there exists much misapprehension upon this point, which they therefore endeavour to remove.

Para. 16. 19. With reference to the large reductions made in the Indian Army, they state that whatever the number of regiments to be reduced, there must of course have followed a corresponding reduction in the number of colonelcies, and consequently of Colonel's allowances; and on the arrangement by which that reduction was effected at the same time that special inducements were held out to the Lieutenant-Colonels to retire, they justly remark:—

Para. 18. "This was intended as a means of making the retardation of succession to the rank of regimental "Colonel with Colonel's allowance, a gradual process, and so of making it less immediately felt," and they sum up their remarks under this head in the following words:—

Paras. 28 & 29. "Under this point, therefore, we are of opinion that, if promotions* be allowed in continuation of the promotions already made from the 1st January, 1862, to complete the numbers above indicated, no loss will have been sustained, either by regiments or by officers, of anything they could be entitled to claim under this head."

20. The Commission appear to have overlooked the fact, that promotions to an extent even beyond those now recommended by them were actually made under the authority of Sir C. Wood's Despatch, No. 194, of the 17th June, 1864, in continuation of those made on the 1st January, 1862.

21. A reference, however, to that Despatch, paras. 51, 52, and 80, and to General Order by your Government, No. 632 of the 4th August, 1864, will show that with a view of rendering the effect of the reduction in the number of Lieutenant-Colonels equal in the three Presidencies, promotions were made in Madras and Bombay to the following extent:—

	Cavalry.	Infantry.
Madras, Lieutenant-Colonels	1	4
Bombay " "	0	3

22. These promotions were made from the 16th July, 1864—the date of the receipt in India of the despatch authorizing them. I shall not object, however, to their being antedated to the 1st January, 1862, in accordance with the views of Sir John Aitchison's Commission.

4th Point. 23. The Commission discuss the fourth point by endeavouring to ascertain the average period served heretofore in the grade of regimental Lieutenant-Colonel.

24. This, taking the means of two periods of 15 and 20 years respectively, they show to have been 11·02 years.

25. This being the case, and having already stated in para. 23 of the report that, "supposing a "reduced establishment or regiments to have been determined upon and published in December 1861, "Her Majesty's Government would of course have been distinctly entitled to declare the difference "of number, namely 15 supernumerary, and therefore if thought good, liable to the ordinary process "of absorption, more or less gradual," and shown that the course followed did actually make the inevitable retardation of promotion a gradual process, and so less immediately felt, the Commission have notwithstanding recorded their opinion upon this point in the following words:—

Para. 49. "Taking into consideration, then, that none of the Lieutenant-Colonels promoted prior to 1st "January, 1862, have benefited by any of the measures which have operated to accelerate promotion "among their juniors; that, on the contrary, the changes which have occurred have been to "their detriment, as having lessened their chances of employment in commands, and that their "succession to colonelcies in the ordinary course from the removal of their retired seniors must "henceforth be slower than before, we come to the conclusion that the 12 years' term is about two "years in excess of a fair period."

*Viz.,—

	Cavalry.	Infantry.
Madras, Lieutenant-Colonels	1	4
Bombay, "	0	3

26. The Commission thus fully admit the propriety of reduction, and the inevitable consequence of that reduction, *viz.*, some retardation of promotion; but they conclude not only that such retardation is inadmissible under the guarantee, but that, in this particular case, the advancement of Lieutenant-Colonels to the Colonel's allowance should be expedited by one year, that is service in the grade of Lieutenant-Colonel reduced from 11 years to 10.

27. With regard to the Lieutenant-Colonels promoted on and after the 1st January, 1862, the Commission report, as follows:—

" As regards Lieutenant-Colonels promoted on and after the 1st January, 1862, the 12 years' " rule has been made absolute from that date forward. Paras. 50 & 51.

" As a general period, looking to the future of the Indian Service, and probably not representing " eventually more than 38 years' total service, it may not be in excess."

28. Having thus recorded their opinion upon the 4th point of their enquiry, being one of the two cases in which Lord Cranworth's Commission pronounced a doubtful opinion, the Commission proceed to consider the length of service to which some of the older officers in the Army have attained, notwithstanding, as they observe, with reference to certain Lieutenant-Colonels of the 1st January, 1862, "that some of these officers have had their promotion to Lieutenant-Colonel accelerated " by the retirement of officers upon the increased pensions;" and, believing that it might be for the " advantage of the public service to provide a means of relieving the Indian Army from old and worn out officers, such as some may even now be, and as more will hereafter become, they suggest the addition of two higher rates of retiring allowance for 35 and 38 years' service respectively, either in the form of pension or of part pension and part capital, these periods usually representing a total service of seldom less than 40 or 43 years. Para. 56. Para. 57.

29. In further support of this proposal, the Commission observes, as follows:—

" And we may here observe that the periods of service of officers in the grades of Major and " Captain are, in numerous instances, much longer than is generally supposed; so that, with all the " advantages of accelerated promotion, they will, for the greater part, reach to 40 or more years' " service before promotion to regimental Colonel. There are for example, many officers now regi- " mental Captains, who have already completed more than 25 years' service." Para. 54.

And they give examples of some officers who, under the ordinary chances of the service, have been unlucky in their promotion.

30. The cases of these officers, who, it is admitted, have had or will have their promotion accelerated by recent measures, did not properly fall within the limits of the enquiry entrusted to the Commission; but it must be observed, in connection with this subject, that so far as promotion, present and prospective, is concerned, a careful comparison between the Indian Army Lists of 1860 and 1866 will show that, by the several measures introduced during that period, *viz.*, the introduction of new rules of promotion for the officers joining the Staff Corps, the offer of special annuities, inducing above 300 of the senior officers to retire, the removal of the names of all Staff Corps officers when attaining to the position of Lieutenant-Colonel in the list of the Indian Army, and the brevet arrangement of 1864, the promotion of the officers of the Indian Army has been greatly accelerated within that period, and this, too, while the Native Army itself was undergoing reduction to the extent of one-half of its strength in 1857.

31. Upon the 5th point the Commission have reported, as follows:—

" We have given our most anxious and earnest consideration to this very difficult and complicated " question, and we consider that we shall not fulfil the duty imposed on us if we fail to submit our " opinion that the measure adopted by Your Majesty's Government upon this point has not been " effectual and sufficient to remove the grievance originally complained of. The main ground of that " grievance we consider to be the regimental connection between the local Line and the Staff Corps, " by the retention of the names of Staff Corps officers on the cadres of regiments, and also by the " retention on the old European regimental cadres of the names of those officers who have been trans- " ferred to the new Line Regiments. Paras. 65 & 66. 5th Point.

" The measure adopted by Your Majesty's Government, therefore, falls short of what is required, " inasmuch as it has not removed the cause of grievance, whilst the grievance itself has been aggra- " vated by the disturbing effect of the general brevet.

" The removal of Staff Corps Officers from regimental cadres might not prevent supersession " either of the local Line officers by those of the Staff Corps, or of Staff Corps officers by those " of the local Line, but—belonging as they then would do to entirely distinct cadres, each body " having its own distinct terms of service—such supersession would constitute no invasion of " principle."

32. And they sum up their observations upon this point in the following words:—

" On point V., we consider that the measure adopted by Your Majesty's Government has not been effectual and sufficient, because of—

" 1st.—The non-removal from the cadres of regiments of the officers transferred to the Staff " Corps and the new Line Regiments, as indicated by the Committee assembled by the " Secretary of State, 30th July 1860, of which Lord Hotham was President.

" 2nd.—The consequent withholding of promotion.

" 3rd. The disturbing effect of the brevet.

" In the settlement of questions of a most complicated character, arising out of extensive and " organic changes in a body of such magnitude as the old Indian Army, accompanied with large but " unavoidable reductions, we cannot venture to suppose that all objections can be removed, or all " conflicting interests reconciled; but it appears to us perfectly practicable to remove all just ground " for complaining of the infraction of any real and established right in connection with the particular " points referred to us for report."

33. It will be seen that the Commission appointed by Her Majesty on this occasion have not confined themselves strictly to the questions submitted for their consideration.

34. They have suggested in one instance a measure, *viz.*, the introduction of additional rates of retiring pension, which has no reference to the complaints brought under the consideration of Lord Cranworth's Commission; and they have, moreover, recorded their opinion against an important feature in the scheme for the re-organization of the Indian Army, which the former Commission had pronounced to be no breach of the Parliamentary guarantee, and which, therefore, did not come within the scope of their enquiry. I allude to the retention of the names of officers of the Staff Corps on the cadres of their former regiments.

35. Her Majesty's Government consider this question to have been finally settled by the report of Lord Cranworth's Commission, and they decline to re-open it. They are, however, not only ready to apply in all cases a remedy to acknowledged grievances, but they are most desirous to remove every reasonable ground of complaint on the part of the officers of the Army.

36. Although, therefore, Her Majesty's Government are convinced that the substantial interests of the Army at large have been, in many respects, materially advanced by the several measures that have been introduced since 1860, they have, nevertheless, determined to adopt, as far as practicable, those recommendations of Sir John Aitchison's Commission which are not inconsistent with the opinions expressed by the former Commission.

37. In accordance with this determination, I have to communicate to your Excellency the sanction of Her Majesty's Government to the following measures:—

1st. The promotions in the Presidencies of Madras and Bombay, made under paragraphs 52 and 80 of Sir Charles Wood's Despatch of the 17th June, 1864, with those made in succession thereto, are to have retrospective effect given to them from the 1st January, 1862, *viz.*:—

	Cavalry.	Infantry.
Madras, Lieutenant-Colonels	1	4
Bombay „ „	0	3

2nd.—From and after the date of receipt of this Despatch, all officers of Cavalry and Infantry of the Indian Army, who attained the rank of regimental Lieutenant-Colonel prior to the 1st January, 1862, and all officers of the several Staff Corps who had attained to the rank of regimental Lieutenant-Colonel prior to the formation of those corps, *viz.*, 18th February, 1861, shall upon the completion of 10 years in that grade, be placed in receipt of the Colonel's allowance. Lieutenant-Colonels now on the list, who may have been already more than 10 years in that grade, will be granted the Colonel's allowance from the date of receipt of this Despatch.

3rd.—The Military Retiring Regulations of 1837 will be extended by the addition of the two following rates of pension:—

	Per Annum.
After 35 years' service	£600
„ 38 „ „	750

5th Point. 38. Her Majesty's Government have very carefully considered the conclusion at which the Commission has arrived upon the 5th and last point, *viz.*, the sufficiency of the measures adopted with a view of remedying that supersession of regimental officers of the Indian Army by their brother officers in the Staff Corps, respecting which Lord Cranworth's Commission reported that, in their opinion, the Parliamentary assurance had not been adhered to; but they regret that they cannot admit the soundness of that conclusion, which is in one very important particular, at variance with the opinion expressed by Lord Cranworth's Commission, while the measures suggested by them, in connection with this point, are open to most serious objections.

Para. 42. 39. In alluding to the complaint of supersession, Lord Cranworth's Commission stated as follows:—

"What the officers complain on this head is, the immediate and prospective supersession in "rank of regimental officers by those in the Staff Corps, which was the inevitable consequence "of the rules regulating promotion in the Staff Corps, and especially of that which allows previous "Staff service to count towards the period of service qualifying for promotion in the Staff Corps."

Para. 65. 40. The present Commission say—

"The main ground of that grievance we consider to be the regimental connection between the "local Line and the Staff Corps by the retention of the names of Staff Corps officers on the cadres "of regiments, and also by the retention on the old European regimental cadres of the names o. "those officers who have been transferred to the new Line regiments."

Para. 39. 41. Lord Cranworth's Commission recorded a deliberate opinion that, so far as promotion was concerned, the retention upon the cadres of their old regiments of the names of officers transferred to the Staff Corps is not, practically, a departure from the assurance given by Parliament that Indian officers should, on the transfer of the local Army to the Crown, retain all their previous advantages.

Para. 72. 42. The last Commission have expressed an opinion, on the other hand, that the recent measures introduced with a view of remedying the supersession complained of have not been effectual and sufficient, because of the non-removal of these names.

43. Her Majesty's Government feel satisfied that the plan adopted of retaining the names of officers nominated to the Staff Corps on the cadres of their regiments, with a view of regulating promotion, sanctioned as it was in the first instance by the opinion of the Law officers of the Crown, and subsequently confirmed by the judgment of the Commission over which Lord Cranworth presided, was well calculated to secure to the officers under the contemplated changes that uniform system of regimental promotion, in all its integrity, which they had been accustomed to look forward to.

44. The removal from the general regimental list of the Army of the names of Staff Corps officers, and of those who joined the new Line regiments, upon their attaining to the position of Lieu-

tenant-Colonel—a boon to the Army unattended with any of the inconveniences that would attend the removal of the names from the regimental cadres—has been already sanctioned; but Her Majesty's Government do not consider it either just or expedient to attempt any further interference with a system which was adopted upon a careful consideration of the interests involved, and which has received the approval of high legal and other authority.

45. Moreover, any attempt to carry out at the present time the removal of those names, in the manner implied in the concluding paragraph of the Commission's report, would be attended with the greatest embarrassment, and could not possibly be effected without far greater disturbance in the relative position of the officers of the several branches of the Army than has yet arisen from all the changes in its organization that have been effected during the last five years.

46. There remains, therefore, to be considered, as the only direct objection made by the Commission to the system of brevet rank established under Sir C. Wood's Despatch of the 17th June 1864, with a view to remedying the supersession complained of—the "disturbing effect" of that measure.

47. It is well known that the supersession complained of, in the first instance, as an interference with the usage of the Service, was that of officers of the Indian Army by their juniors in the same cadre, on the latter being admitted and promoted to a higher grade in the Staff Corps.

48. This supersession has been rectified by the brevet arrangement referred to, inasmuch as, under the peculiar constitution of the Indian Army, it is now impossible, save in rare and exceptional cases, that an officer can be superseded in Army rank by another officer of his own cadre; upon this subject the opinion of the late Commander-in-Chief in India, already quoted, is clear and decisive.

49. On the other hand, although the introduction of one general rule of Army promotion by length of service, generally fair and just to the whole service, could not fail to be followed, on its first introduction, by changes in the relative position on the general roll of the army of officers of different Corps, the rule has, upon the whole, been attended with benefit to the Service at large, and the result of the several measures carried into effect since 1861 has been to give a general impulse to promotion, both Army and regimental, throughout the Army.

50. Satisfied that, upon the whole, the Officers of the Army have derived, and will continue to derive, great benefit from the system of brevet promotion lately sanctioned by Her Majesty's Government, as laid down in General Order by your Government, No. 634, of the 4th August 1864, Her Majesty's Government do not propose to interfere with its future operation.

51. Your Excellency will, however, have observed that since the introduction of the rule for conferring brevet rank upon the Officers of the Indian Army, there has been a disposition on the part of the officers to complain that the rank thus conferred upon them, with the view of remedying supersession, did not carry pay, and was therefore less favourable to them than that conferred upon Staff Corps Officers.

52. Whatever title the Parliamentary guarantee may have given to the officers to exemption from supersession in rank by any process inconsistent with the established usage of the Service, Her Majesty's Government cannot recognize the claim of the officers, either under the rules and custom of the Service or under that guarantee, to any rate of pay beyond that to which they are entitled by their regimental rank under the established principle of rise by regimental seniority.

53. No officer can at any time claim an amount of pay beyond that due to his regimental rank so regulated, whatever might be the pecuniary advantages which the Government might think proper to give to another.

54. Being, however, desirous of removing all ground of complaint on this point, Her Majesty's Government have resolved upon the adoption of the following modification of the existing rules regarding admission to and promotion in the Staff Corps.

55. From and after the date of receipt of this despatch, the qualifying period of service in the Staff Corps laid down in the second paragraph of the Royal Warrant of the 16th January, 1861, will be dispensed with, so far as concerns Officers now in the Staff Corps and those of the Indian Army who may join any one of those corps under the terms of this despatch.

56. Officers of the cadres of Cavalry and Infantry of the Indian Army will be allowed to enter the Staff Corps of their respective Presidencies from the date of receipt of this despatch, provided their application to that effect be received at the Adjutant-General's Office of their respective Presidencies by the 1st January, 1867, if the officer be in India; by the 31st March, if he be out of India.

57. Such officers will not be subject to any test prior to admission.

58. Inasmuch, however, as many of these officers have gained great promotion as a consequence of measures which conferred no such benefit upon Staff Corps Officers, and that such rise in promotion was even due in some cases to the removal of the names of Staff Corps Officers from the list of the local line service, and that it would be giving to such officers, if admitted to the Staff Corps with rank so obtained, an undue advantage over those already in the Staff Corps, it has been determined that Officers of the Indian Army, availing themselves of the opportunity now offered to them of being transferred to the Staff Corps, can only be allowed to enter that Corps upon these terms, with the substantive rank to which they would have attained under the Staff Corps rule, as modified in paragraph 55 of this despatch, if they had joined the Staff Corps on its formation, *viz.*, 18th February, 1861.

59. Any higher regimental rank they may have attained meanwhile in their respective cadres must, on their electing to join the Staff Corps, be cancelled.

60. I have further to inform you that it has been determined so far to modify the rule regarding succession to Colonel's allowances, laid down in paragraphs 13 and 14 of Sir Charles Wood's Despatch No. 467, dated 3rd December, 1861, as to make the rule of succession to that allowance after the stated period of service in the grade of Lieutenant-Colonel, applicable to all officers now in the several Staff Corps (with the exception of those who fall under the rule laid down in paragraph 37, clause 2, of this despatch), and to all who may join them from the Indian Army, under the terms of this despatch, without reference to any fixed establishment of Colonels with Colonel's allowance; and further, to allow the brevet rank of Lieutenant-Colonel, granted under the rules contained in Sir

Charles Wood's Despatch No. 194, of the 17th June, 1864, to count towards the completion of the 12 years' period of service so laid down.

61. I request that your Excellency will, without delay, cause the above instructions to be carried into effect by notifying to the service at large, that—

1st. The promotions in the Presidencies of Madras and Bombay, made under paragraphs 52 and 80 of Sir Charles Wood's Despatch of the 17th June, 1864, and those in succession to them, are to have retrospective effect from the 1st January, 1862.

	Cavalry.	Infantry.
Madras, to be Lieutenant-Colonel	1	4
Bombay „ „ „	0	3

2nd. All officers of the Cavalry and Infantry of the Indian Army who attained the rank of Regimental Lieutenant-Colonel prior to the 1st January, 1862, and all officers of the several Staff Corps who had attained to the rank of regimental Lieutenant-Colonel prior to the formation of those corps, viz., 18th February, 1861, shall hereafter, upon the completion of 10 years in that grade, be placed in receipt of the Colonel's allowance, in the event of their not having already attained to that allowance in ordinary succession, under the operation of the system laid down in Sir Charles Wood's Despatch, No. 340, dated 10th August, 1861, paragraph 18.

3rd. The Military retiring regulations of 1837 will be extended by the addition of the two following rates of pension:—

	Per Annum.
After 35 years' service	£600
„ 38 „ „	750

4th. From and after the date of receipt of this despatch, the qualifying period of service in the Staff Corps, laid down in the 2nd paragraph of the Royal Warrant of the 16th January, 1861, will be dispensed with, so far as concerns officers now in the Staff Corps and those of the Indian Army who may join any one of those corps under the terms of this despatch. Officers of the Staff Corps who may be entitled to promotion to a higher substantive rank under the modification of the existing rule, will receive such promotion from the date of receipt of this despatch.

All officers of the Cavalry and Infantry of the Indian Army, with the exception of those who upon the new conditions of service and are borne upon a general list, will be allowed to enter the Staff Corps of their respective presidencies upon the conditions above laid down, from the date of receipt of this despatch, without being subjected to previous examination.

5th. All officers now in the several Staff Corps, and all who may join them under the terms of this despatch, will be entitled to the Colonels' allowance after 12 years' service in the grade of substantive Lieutenant-Colonel, without reference to any fixed establishment of Colonels with Colonels' allowance, the brevet rank of Lieutenant Colonel attained to under the regulations published in General Order by your Government, No. 632, dated 4th August, 1864, being however considered a substantive rank for this purpose, and allowed to count towards the above period.

62. All the regulations at present existing relating to admissions to, and promotion in, the Staff Corps, will be still applicable to officers hereafter entering the several Staff Corps, other than those of the Indian Army, who join under the terms laid down in this despatch.

63. Having now disposed of the several complaints made by officers of the Indian Army, and considered by either of the Royal Commissions with reference to the Parliamentary guarantee, I shall address your Excellency in a separate despatch upon the subject of the claim made by many of the officers to compensation for money contributed by them towards the regimental retiring funds. These claims cannot justly be supported by any reference to that guarantee, and therefore they were not entertained by Lord Cranworth's Commission; but Her Majesty's Government are unwilling to leave to the officers generally any ground of complaint which they can, consistently with their duty remove, and therefore they have determined that the representations made by the officers in regard o this matter shall receive further consideration.

I have, &c.,
(Signed) CRANBORNE.

To his Excellency the Right Honourable
The Governor-General of India in Council.

APPENDIX I.

MEMORANDUM explanatory of the System of granting the rank of Local Colonel, and Local Major-General, to King's Officers in India, dated 11th April, 1868. By Mr. G. Cochrane, Assistant Military Secretary, India, Office.

Para. 1. An Indian Office Memorandum, dated 7th March, 1866, suggests the expediency of considering whether the system in force from 1836 to 1854, regarding the grant of local rank of Colonel and Major-General, might not be reverted to under the present exceptional circumstances.

2. The suggestion was made in consequence of a representation by the Commander-in-Chief in India, in July last, on the subject of the supersession of the Colonels and Lieutenant-Colonels of the British service in India by the promotion to the rank of Major-General and Colonel of their juniors in the Indian Army.

3. This representation has been sent by Sir William Mansfield both to the Government of India and the Horse Guards. The Government of India send it to the Secretary of State, but abstain from expressing any opinion on it, as the suggestions relate solely to Her Majesty's British Officers. As affecting the position of those Officers very materially, and as being of a very important nature, the Field-Marshal Commanding-in-Chief considered it right to submit the representation for the information and consideration of the Secretary of State for War. It is sent from the War Office to this office, with the view of obtaining the opinion of the Secretary of State for India on the suggestions made in it.

Military Letter, 31st August, 1865, No. 390.

4. In order rightly to understand Sir William Mansfield's representation, some knowledge is required of a system of promotion which once prevailed in regard to the higher ranks of officers in India. This will, therefore, be briefly explained.

5. Under the often-quoted despatch of the Court of Directors of the 15th January, 1796, the officers of the Indian Army were to be promoted "by "seniority in their respective regiments to the rank of Lieutenant-"Colonel." The rank of Colonel was to accompany the attainment of a regiment by the senior Lieutenant-Colonel in the Line of the respective arms of the service.

Para. 14, Orders of 1796.

6. Both these arrangements were short lived. The first was terminated by the Court of Directors themselves in 1798, and regimental promotion, in future, stopped at the rank of Major. The second ended by the direct interference of His Majesty's Government, in the year 1806, when after a long discussion between the Court of Directors and the Duke of York, in the course of which "every argument was employed in support of the claims of the "Company's Officers to the promotion incidental to their appoint-"ment to the command of regiments under the regulations established 1796," the privilege of rising regimentally to the rank of Colonel was stopped. The decision was communicated to the Indian Army in Orders, as follows:—

See Rules for Officers, p. 460. Change in 1798.

Despatch, 23rd Dec., 1806.

See G. O. G. G., 28th July, 1807. Henley's Code, pp. 121–2.

1806.

"In consequence of the inconvenience and difficulties occasioned by the operation of the "rule established by the General Army Regulations of 1796, by "which Lieutenant-Colonels of the Company's service were pro-"moted to the rank of Colonel, and to the command of regiments and battalions, without "reference to their general rank in the Army as Lieutenant-Colonels, the Court of Directors "have been pleased to revise the regulations in this respect, and to signify their pleasure on "the subject in the following extracts of a General Letter, dated 23rd December 1806,—

"'17. That in future, when a vacancy occurs in the command of a regiment of Infantry, "Battalion of Artillery, Brigade of Cavalry, or the Corps of Engineers, the senior Lieutenant-"Colonel succeeding to such command shall not, in consequence, be promoted to the rank of "Colonel, but shall be called Lieutenant-Colonel Commandant of the regiment, battalion, "&c., until by the general brevet promotion in His Majesty's Army he becomes entitled to be "promoted to the rank of Colonel by the date of his Commission as Lieutenant-Colonel.

"'18. The Lieutenant-Colonel Commanding is, however, to enjoy the same emoluments "in every respect, on obtaining the command of the regiment, &c., as he would be entitled "to if he had been promoted to the rank of Colonel under the Regulations of 1796.

"'19 This regulation will completely remove all cause of complaint in the King's Lieu-"tenant-Colonels, regarding the promotion of Officers of that rank in Our service, and it "appears to Us to be the most effectual mode of doing so. At the same time, it will have "the additional advantage of preventing all supersession among the Lieutenant-Colonels in "Our service by the accidental promotion that has heretofore occasionally taken place of a "junior Lieutenant-Colonel in one Corps, before that of his senior in other Corps.'" (*Arms.*)

7. It will be observed from the concluding remark of the Court of Directors, that the unequal operation of the rule for promotion to the rank of Colonel, by the regimental line step, has been felt by the Company's Lieutenant-Colonel, as well as by the Lieutenant-Colonel of the King's service.

8. The restriction on the rise to Colonel was introduced during a period of general war. While the war lasted no bad effects of the withdrawal of the rank were felt. The general Brevets following each other very rapidly, the Company's Lieutenant-Colonels soon became Colonels, and the Colonels, Major-Generals. But when the war ceased, and general Brevets were issued at very long intervals only, the stagnation of promotion among the Generals and Colonels of the Company's Army began to be seriously felt, until it had produced this result,

that there were no longer any General Officers, and very few Colonels belonging to the Company's Army who had not had a tour on the Staff.

9. The Government of India, in consequence, had felt obliged, in justice to the fair claims of the Indian Officers, to allow Lieutenant-Colonels to serve on the Staff, notwithstanding their inadequate rank. The effect of this was, that such of the King's Colonels or Lieutenant-Colonels as were senior to the Company's Staff Lieutenant-Colonels were removed from their regiments, or the regiments themselves removed from the Company's Staff Lieutenant-Colonel's divisional command.

10. It was shown in an India Office memorandum, dated 2nd February, 1828, that "the Company have now but 69 General Officers and 16 Colonels, to an army of 4,600 "Officers and 300,000 men, with 55 Lieutenant-Colonels of from 10 to 15 years' standing.

11. This evil was too glaring to be allowed to remain without an effort to cure. A discussion again ensued between the Court of Directors and the Horse Guards. In the course of this discussion the Duke of Wellington laid down this principle,—

Memorandum without date (1827).

"The Officers in the service of the East India Company have many advantages. They "must fill all the efficient situations on the General Staff of the Army, and, with few "exceptions, all the situations of emolument. The Company's armies in the East Indies are, "in fact, principals, and that of His Majesty's only auxiliary, however brilliant the service of "His troops, and however necessary in every enterprise of importance; and every effort to "alter this relation only tends to establish it more firmly. It is founded on the nature of the "political government in its separation from that of His Majesty, and in the nature of the "service, of the language of the country, and of the climate. But it will not answer to lower "the spirit of this auxiliary army. An Officer who had distinguished himself at the head of "one of His Majesty's regiments, and who may thereby have rendered essential service, at an "important moment, must not be liable to be superseded by one junior to himself in the rank "of Lieutenant-Colonel, either as Colonel, or, subsequently, as Major-General. Such super-"session would be quite inconsistent with the spirit of the settlement of 1796, and with the "letter of that of 1806, called for, as it was, by the Officers of the East India Company's "army, and not by those of the King."

12. The Duke of Wellington having left the Horse Guards before the discussion terminated, the decision devolved upon Lord Hill. The result was communicated to the Government of India by the Court of Directors, in a Despatch dated 3rd December, 1828,—

"We have taken into early and most attentive consideration your Military Letter of 9th "February, 1828, and, having communicated with His Majesty's Ministers and the General "Commanding-in-Chief, on the important topics therein brought to our notice, we have the "satisfaction to announce to you the following arrangements.

* * * * * *

"An arrangement has been made, in communication with the high authorities before "adverted to, for granting the rank of Colonel regimentally to every Lieutenant-Colonel "Commandant of a regiment of Cavalry or Infantry, or of a battalion of Engineers or of "Artillery, in our service.

"You are to observe, however, that, with a view to prevent the supersession of His "Majesty's Officers by the indulgence now accorded to the Company's Officers, the Com-"mander-in-Chief in India will be empowered to grant the temporary and local rank of "Colonel by brevet to any Lieutenant-Colonel of His Majesty's service who might without "such grant, be superseded by a Company's Officer rising to the rank of Colonel regimentally.

"It is, moreover, understood that if one of His Majesty's Lieutenant-Colonels so "promoted at one Presidency shall be removed to another Presidency, such promotion will be "cancelled; but another brevet commission will be granted to him, if necessary, to put "him on a par in respect to rank with the Officers of the establishment to which his services "shall have been transferred."

13. In conformity with this decision, a General Order was published, announcing the restoration of the rank of Colonel to the Indian Armies, and no less than 148 Lieutenant-Colonels were promoted to the rank of Colonel on the same day,* and took their places accordingly on the list of Colonels, for promotion to the rank of General Officer by His Majesty's brevets.

* Bengal 78
Madras 39
Bombay 31
See G. O., 5th May, 1829, No. 93, and G. O. C. C., 10th June, 1829, publishing letter of Lord Hill to Lord Combermere.

14. As might naturally have been expected, the grant of brevet rank under this decision to the King's Lieutenant-Colonel gave rise to numerous complaints from the Company's Lieutenant-Colonel, who had been entirely overlooked in the arrangement. When a fortunate Lieutenant-Colonel of either arm of the Company's service obtained his regiment or battalion, all the Lieutenant-Colonels of the King's service in the same Presidency senior to him were also raised to the rank of Colonel, but no such protection was afforded to the senior

Military Letter, 8th August, 1831, No. 60.

Company's Lieutenant-Colonel of the other arms. In August 1831, the Government of India brought to the notice of the Court of Directors, that by the recent promotion of Colonel Macleod, Bengal Engineers, and the consequent promotion, under the above rule, of four King's Lieutenant-Colonels, no less than 55 Lieutenant-Colonels of the Company's service had been superseded; and they earnestly urged the expediency, and even the justice, of rescinding the rule which had led to this result. In a letter which followed shortly afterwards the Government of India transmitted memorials from several of the Lieutenant-Colonels thus superseded, and expressed their opinion that the efficiency of the Company's Army, and the just claim of the Military Officers as members of a seniority service, required an adherence to the system of promotion to the rank of Colonel inclusive, as established in 1796, unencumbered by any conditions similar to those introduced in 1828.

15. The correspondence was sent by the Court of Directors to the President of the India Board, with the following observation,—

Letter to Right Hon. Charles Grant, 23rd June, 1832.

"We beg leave to put the case into your hands, satisfied that the "interest you have invariably manifested for the welfare and honour of the Company's "Officers, and for their just claims to rank and command, proportioned to their length of "service, will lead you so to represent their case to our most gracious Sovereign as to induce "His Majesty to withdraw from the Commander-in-Chief in India, the authority with which "he is now invested of granting the local rank of Colonel to the Lieutenant-Colonels of His "Majesty's army serving in that country, in supersession of the Lieutenant-Colonels of the "Company's establishment."

16. A period of two years having elapsed, and no decision of His Majesty's Government having been passed, the Court of Directors again pressed the subject on the attention of the President of the Commissioners for the affairs of India. They were well aware, they stated, from personal communications held with him, that the subject had engaged his serious attention, and that he had been anxious "to obtain the assent of His Majesty's Government "to an arrangement which should place the rank of the Company's "Officers upon a basis suited to the constitution of the army and "the wants of the service." In the course of the time which had elapsed since the first complaint was made, the evil, as might have been expected had multiplied. "Thus, at Bombay," they observed, "the promotion of a Lieutenant-Colonel of Artillery "occasioned the issue of the local rank of Colonel to three Lieutenants-Colonels of His "Majesty's army, to the supersession of eleven Lieutenant-Colonels of the Company's army, "whilst in Bengal, the promotion of Lieutenant-Colonel Tickell, of the Engineers, to the rank "of Colonel would occasion the promotion of two Lieutenant-Colonels of His Majesty's army, "in supersession of 31 of the Company's army."

Letter to India Board, 12th June, 1834.

17. The decision of the Home Government was communicated by the Court of Directors to the Government of India in January 1835.

Despatch, 28th January, 1835, No. 2.

"After a protracted discussion and much unavoidable delay, "arising partly out of intricacy and delicacy of the subject, and "partly out of the state of public affairs, we have the satisfaction to inform you that the "General Commanding in Chief, Lord Hill, has, with His Majesty's approbation, sanctioned "the following arrangement:—

"The brevet rank of Colonel will be granted to all Lieutenant-Colonels of the Company's "service senior to others of the same Presidency who may attain the "rank of Colonel regimentally, in the same manner as such brevets "are now granted to Officers of the King's service, which rule is to be applied, both retro-"spectively to the supersession occasioned by the promotion of Colonel Macleod and other "Officers, and prospectively, to those which may hereafter occur by the promotion of Com-"pany's Officers to the rank of Colonel regimentally, so that both King's and Company's "Officers shall bear the same relative rank to each other as Colonels as they previously held "in the rank of Lieutenant-Colonel, with this understanding, however, that when the number "of Field Officers may be too small in camp or quarters, Colonels not commanding Brigades "will be placed on the Field Officers' roster."

1834.

18. In giving his "entire assent" to this arrangement, Lord Hill stated his object was "to secure to the Officers of each service their fair proportion of commands, and to take care "that no Officer of His Majesty's service shall be superseded by one junior to himself in the "rank of Lieutenant-Colonel, either as Colonel, or, subsequently, as Major-General."

19. The Court of Directors were of opinion that the arrangement would "effectually "remove the supersession complained of by the Company's Officers," but they were led to apprehend, from some expressions in Lord Hill's letter, that "it is intended to withdraw from the Company's Officers "the privilege now understood to belong to them of rising by general "brevet from the rank of Colonel, obtained regimentally, to that of Major-General."

Letter of Chairs to Right Hon. Chas. Grant, 27th November, 1834.

20. Lord Hill was not aware that any part of his letter could have given cause to the apprehensions which the Chairs felt on this subject. He had no hesitation in stating that no such idea was ever entertained by him. His whole object had been to secure equality in rank and commands; and he added, "It is perfectly understood, from the nature of the respective "services of the King and Company, that in the former the brevet must necessarily be tem-"porary, and in the latter permanent."

Letter to Right Hon. C. Grant, 9th December, 1834.

21. In consequence of the decision then come to, 77 Lieutenant-Colonels of the Indian armies were promoted, at once, to the rank of Colonel.*

* Bengal	.. ..	56
Madras	.. ..	8
Bombay	.. ..	13
		77

22. In May, 1835, the Government of India, in reporting the measures taken by them for carrying out the instructions contained in the Despatch of the Court of Directors of the 28th January, 1835, observed that the remedial brevet, if restricted to one Presidency, would lead to a painful supersession of the Officers of the other Presidencies in the rank of Major-General; and they recommended, therefore, that on every occasion requiring it, the brevet should be made to extend throughout India, by which all supersession of the Officers of one Presidency by those of another, or by His Majesty's Officers, would be avoided.

23. This suggestion was submitted by the Court of Directors to the Horse Guards as necessary to the completion of the arrangement of January, 1835.

Letter to Sir John Hobhouse, 22nd January, 1836.

24. In his reply, Lord Hill reviewed at some length the observations of the Government of India and of the Court of Directors on this and other points bearing on the subject. Having given his best attention to the questions raised, he offered his sentiments on each in succession, prefacing, however, his remarks with his declaration made on previous occasions:—

Letter to Sir John Hobhouse, 11th June, 1836.

"That my whole object is to secure to the Officers of each service their fair proportion of "commands; and to take care that no Officer of His Majesty's service should be superseded "by one junior to himself in the rank of Lieutenant-Colonel, either as Colonel, or, subse-"quently, as Major-General."

"This," Lord Hill now observed, "is the only safe and unerring principle on which the "system of promotion can be soundly and justly regulated as between the King's and Com-"pany's Officers in India. It is the principle acknowledged as the general rule and guide in "every military service, and, provided that no infraction be made in it, there is no suggestion "which I will not most readily support for the concurrence (convenience ?) and advantage of "the service of the East India Company, as tending to the mutual co-operation and efficiency "of both."

25. The Government of India having inquired whether the Officers promoted to Colonel in the Company's service in India were eligible to the rank of Major-General by general brevet, Lord Hill fully participated in the surprise expressed by the Chairs at the question. He could only repeat what he had stated in 1834:—"It was perfectly understood, from the "nature of the respective services of the King and Company, that in the former the local rank "must necessarily be temporary, and in the latter permanent." He now added:—"I could "not have imagined that this could bear any other construction than that which it appears was "justly put upon it by the Chairman and Deputy-Chairman, that it must confer on the Com-"pany's Officers so promoted the same claim to be advanced to the rank of Major-General as "was originally conferred, by the Regulation of 1796, upon Officers of the Indian army who "obtained the rank of Colonel regimentally."

26. With regard to the recommendation that the brevet should extend throughout India, Lord Hill stated there could be no objection on his part to a measure which applied so exclusively to the Company's service, although it would occasion the promotion of 29 more Lieutenant-Colonels to the rank of Colonel.

27. On the suggestion of the Government of India, that the Company's Lieutenant-Colonels should be allowed to rise regimentally to the rank of Colonel without any consequent brevet to others, Lord Hill observed that such a system of promotion was not "caused by any "demands for the services of the Officers of higher rank in the Company's and the King's "army, but solely in consequence of a regulation which the Company's army have judged it "advisable to persist in enforcing, that the rise of a Lieutenant-Colonel to the command of a "regiment in certain Corps of their service should, *de facto*, become Colonel."

28. "The simpler mode," Lord Hill stated, "of putting a stop to such extensive, and, "in so far as the military wants of the army are concerned, unnecessary, promotion to the "rank of Colonel, would be to enact that when a Lieutenant-Colonel arrived at the command "of one of those Corps which now confer upon him, *de facto*, the rank of Colonel, he should "be styled Lieutenant-Colonel Commandant of such Corps, retaining all such privileges and

"emoluments as he now derives as Colonel, so that while all the substantial advantages of his "regimental command would be continued and secured to him, his advancement to the regi-"mental command would not clash with the interests either of the Lieutenant-Colonels of the "East India Company's Army or those of the King's."

Lord Hill continued, "The sole object of every regulation on the subject of promotion in "regard to the Officers of the two armies ought, therefore, to be, as it has ever been, to keep "each Officer in his relative position with his brother Officers of both services, from the rank of "Lieutenant-Colonel upwards, and it is a principle long maintained in the Military Service, and "which on no account should be departed from, that Officers holding Commissions of the same "denomination ought to rank according to seniority of date of that Commission."

29. In reply to this communication, the Court of Directors observed,—"As it is now "finally determined that no Lieutenant-Colonel serving in India "shall be superseded by the promotion of his junior in that rank to "the rank of Colonel, the Court cannot but consider that it will be "desirable for the general good of the service to place a limit upon promotion to the rank of "Colonel to supply regimental vacancies, in order that there may hereafter be no necessity "for the promotion by brevet of Lieutenant-Colonels to Colonels, to an extent disproportioned "to the wants of the service."

Le 21 to President, India Board, st July, 1836.

30. The scheme proposed by the Court of Directors with this object, founded on the suggestions of Lord Hill, was approved by the Government, and accordingly communicated to the Government of India. The rule was henceforth to be as follows:—

See Letter as above. Despatch, 27th July, 1836, No. 9, G. O., 14th November, 1836, No. 226.

"The senior Lieutenant-Colonel of the Infantry on the Bengal Establishment shall, "immediately on the occurrence of a vacancy as Colonel of a regi-"ment in that arm of the Service in Bengal, be promoted to the "rank of Colonel, and all Lieutenant-Colonels of the armies of the "three Presidencies who are senior to him as such, shall be promoted in consequence to be "Brevet Colonels.

1836.—Bengal Lieutenant-Colonels to rule the promotion.

"A Lieutenant-Colonel of the Infantry on the Madras or Bombay Establishments, or of "the Cavalry, Artillery, or Engineers at any one of the three Presidencies, for whom there may "be a regimental vacancy as Colonel, shall succeed immediately to that rank, provided he is the "senior Lieutenant-Colonel of the three Establishments, but not otherwise.

"Lieutenant-Colonels of Infantry of the Madras and Bombay Armies, and Lieutenant-"Colonels of Cavalry, Artillery, and Engineers of the three Presidencies, not being seniors as "Lieutenant-Colonels in India, who may succeed by seniority to the command of regiments, to "be denominated Lieutenant-Colonels Commandant, their promotion to the rank of Colonel "being suspended until their seniors of the Bengal Infantry shall have been promoted to the "rank of Colonel."

"Such Officers will, nevertheless, succeed to all the advantages and emoluments to which "they would have been entitled if promoted to the rank of Colonel."

31. In another Despatch, of somewhat earlier date, the Government of India had been directed to grant the Commission of Colonel to all Lieutenant-Colonels, of whatever Presidency, who might have been senior as such to any Lieutenant-Colonel attaining the rank of Colonel regimentally, "with such dates of rank as shall maintain their relative "seniority with each other as Lieutenant-Colonels."

6th July, 1836, No. 8. General Order, 14th Nov., 1836, No. 225.

32. The new rule had the effect of checking the inequality of promotion to rank of Colonel by making the promotion, and the consequent brevet, dependent on casualties in the largest arm of the service, instead of as before in all the arms, some of them necessarily incident to considerable fluctuations. It was also presumed that an "adequate, but not super-"fluous, establishment of Officers of the rank of Colonel will be "always kept up, whilst seniority as Lieutenant-Colonel will be "strictly observed, and the title of Officers to succeed to Colonelcies, "in virtue of regimental vacancies, will be maintained whenever it can be exercised with due "regard to the interests of the public service."

Letter to India Board, 21st July, 1836.

33. This rule continued in force until the introduction of the new system of promotion to the rank of Colonel under the Royal Warrant of October 1854.

34. The introduction in India of the rank of local Major-General arose out of the following circumstances:—The General Brevet of 10th January, 1837, raised to the rank of Major-General such of the Colonels of the Indian forces of the year 1829 as were Lieutenant-Colonels of 1819. On the "London Gazette" containing the promotions reaching India, Sir Henry Fane, then Commander-in-Chief in India, immediately promoted to the same rank, locally, the Colonels of the Queen's Service senior to them, who had been omitted from the brevet in this country because their rank of Colonel was local only.

Fane Major-Generals, 1837. G. O., Q.T., 27th June, 1837.

35. This summary act occasioned much astonishment in India and England. The Government of India complained of the issue of such an order without any communication with them, and expressed their opinion that the rank thus held was incompatible with the command of a brigade in India.

36. They observed, "if Sir Henry Fane has taken a correct view of the subject, both with "regard to the promotions which he has made, and the employment "of Major-Generals of Her Majesty's service as Brigadiers, the "inconveniences attending on these arrangements cannot have been "foreseen, and it is, therefore, accordingly desirable that we should be favoured with an early "communication of your Honourable Court's Orders on a question of so much importance."

Military Letter, 8th Sept., 1837, No. 73.

37. The justice of the action of Sir Henry Fane was so apparent, and his proceedings in such strict accord with the principles enunciated by the Duke of Wellington and Lord Hill, that, notwithstanding this opinion of the Government of India, it was felt the promotions could not be disturbed. The decision of the Home Government was simply as follows :—

Despatch of Court of Directors, 19th December, 1837, No. 9.

"We have no objection to the promotion to the local rank of Major-General of the "Colonels of Her Majesty's Army serving in India who were seniors as such to Colonels of our "Army promoted to the rank of Major-General by the brevet of the 10th January, 1837, "although we cannot but regret that promotions, which involved considerations affecting the "general arrangements and regulations of the service, were made without previous communica-"tion with your Government.

"Under the special circumstances in which local Major-Generals are placed, we consent "to their being considered as eligible to continue to reside in India, and to hold those brigade "commands which they would have held had their promotion not taken place, provided always "that no interference be permitted with the commands on the General Staff allotted to the "Major-Generals or Brigadier-Generals of the Queen's and the Company's forces respectively."

38. This system of promotion, known as the "Fane" Major-General system, also continued in force until the general brevets ceased to be issued (1854).

39. To return now to the representation of Sir William Mansfield. The object of this, he states, is to point out "the prejudicial manner in which the interests of the Officers of Her "Majesty's British Army have been affected by the changes recently "introduced at the instance of the Secretary of State for India, "for the benefit of the officers of the several Staff Corps, and of the "local armies."

Letter to Military Secretary, Horse Guards, dated 31st Aug., 1865, enclosed in War Office Letter to this Office, 13th Dec., 1865.

"I do not," he says, "venture to suggest a remedy, which would probably have to be "determined after the question shall have been thoroughly sifted by such means and enquiry "as may commend themselves to His Royal Highness and the Secretary of State for War. "But as the Secretary of State for India clearly cannot go back from what has been done, it "would seem that it may be necessary to have recourse to a system of brevet promotion which "shall be good all over the world for fixed terms of service, according to the rules which have "been laid down for the Staff Corps. Such a change would not interfere with the system of "purchase promotion, while on the other hand it would not fail to be most grateful to officers of "considerable service whose means may not admit of purchase, and would put the officers of the "British Service on a reasonable equality with those belonging to India."

40. In support of this view, Sir William Mansfield dwells much on the fact that the Indian Officer has now rank and precedence everywhere. "In former times," he states, "the "rank, precedence, and power of command of Indian Officers were entirely confined to India. "They could not supersede Officers of the British Army out of India. Consequently the gift "of local rank to the British Officers in India, to put them on a par with Indian Officers, was "sufficient to secure them in their rights and privileges as far as was required by the necessity "of the case.

"This however, seems to be no longer so, and we have what looks anomalous, viz., that "the British Officers are to a certain extent secured against supersession in India, but they are "not so secured out of India, while the Indian Officer is secured all over the world."

41. The difference here referred to is apparent only, not real. By Her Majesty's gracious Act of April 1855, the Company's Officers were to have "rank and precedence with Officers of Her Majesty's Regular Army, "according to the dates of their commissions, in all parts of Her Majesty's dominions or "elsewhere."

Rules for Officers, page 468.

42. This however, merely recognised the rank of the Indian Officer out of India, to which locality it had hitherto been confined. It conferred no right of serving out of India. It is true the Indian Officer has been declared eligible so to serve, and, as Sir William Mansfield says, he has served with British Officers in the Crimea and elsewhere. But he cannot claim to serve out of India If his rank should interfere injuriously with that of the British Officers

employed, his services would be declined, or as was stated in Sir Charles Wood's Despatch of June 1864, "special provision would be made in cases where Line "and Indian Officers may serve together elsewhere" than in India.

Rules for Officers, page 813.

43. In all the discussions that have taken place on such subjects, it has been admitted that the brevet rank of the Indian Officer must necessarily be permanent, entitling the holder to further advancement, while, on the other hand, it was equally admitted, as a consequence of the difference of the service, that the rank given to the Queen's Officer to place him on an equality while serving with the Company's Officers in India must be local and temporary only. This principle is not affected by the decision of Her Majesty, that the rank of the Indian Officer is to hold good everywhere.

44. Sir William Mansfield's suggestions are,—That the rank of local Major-General may be restored, so as to preserve equality between the British and Indian Officers in the attainment of that rank in India. That a system of promotion similar to that of the Staff Corps be established for the British Army.

45. There is no gainsaying the assertion of Sir William Mansfield, that the Indian Colonels are much in advance of the British Colonels in their progress to the rank of Major-General, and their progress is likely to be accelerated for the future rather than retarded. As Sir William Mansfield states, the British Colonels of November 1854 will not, in all probability, be absorbed until the end of the year 1868. The last Colonel of the Indian Forces promoted to the rank of General Officer by the line step was Colonel of 27th June, 1857: Sir William Mansfield gives the names of six Colonels* of the British Forces who have lately been superseded by the Indian Colonels. The case of Colonel Haythorne, the last named, is a striking one. He is Colonel of 28th November, 1854, and lately held the important post of Adjutant-General, Bengal.

* Williams, 4th Foot.
Rainier, 98th Foot.
Holdich, 20th Foot.
Errington, 51st Foot.
Christie, 80th Foot.
Haythorne, 1st Foot.
Colonel Rainier, Sir William Mansfield says, has been superseded by no less than 17 Colonels of the local service.

46. Colonels Harris and Travers, of the Indian Forces, commanding Brigades in Bengal, of date of rank respectively the 8th June and 6th December, 1836, were promoted to the rank of Major-General in June and July 1865, and thus superseded Colonel Haythorne, who was serving with them in the same Presidency. If Colonel Haythorne had preferred a claim to be granted the local rank of Major-General, in order to save him this supersession, it would have been difficult to assign a good reason for not admitting it.

47. No disabilities attend the possession of this local rank, as seems to be supposed at the Horse Guards. It has been already seen in the course of this memorandum that local Major-Generals, when the rank was first established, were to be permitted to command brigades. This privilege was continued to them. In January, 1840, the Government of India published a General Order, apparently founded upon a correspondence between the Horse Guards and the Indian Authorities in this country, which had been transmitted to them, but in reality at variance with the intention of that correspondence. One of the provisions of this General Order was,—

"That local Major-Generals of Her Majesty's Service must hereafter be held to be "ineligible to retain the command of their regiments."

48. On receipt of this General Order at the Horse Guards, Lord Hill communicated with the Court of Directors, pointing out that, if no brigade commands happened to be open to the local Major-Generals, it would seem that of necessity they must keep their place with their regiments. His Lordship observed,—

Letter to India Board, 7th May, 1840.

"The only exception that can justly be admitted to this regulation must arise from the "circumstance of his local rank interfering with the rank of a Company's Officer commanding "on the Staff of the Brigade or division in which his regiment may be serving, in which event "it will be at the option of the Queen's Officer to continue to serve with his regiment under such "Company's Officer, or to select his residence within the Presidency in which his regiment is "serving, and receiving the full pay and batta of his regimental rank.

"That the Court of Directors may have more clearly before them the injurious effects "which have already resulted to the interests of the Queen's Officers from this deviation from "the obvious meaning of their Despatch, it is only necessary to state that, while no Officer of "the Queen's service complains of having been displaced to make room for seniors who have "arrived in the country at different periods subsequently to his appointment to command, "it is considered and felt as a very great hardship that a local Major-General, a Lieutenant-"Colonel in the Queen's army, should be cut off from falling back on his own regiment, and "declared to be ineligible to exercise the command of it when he was actually the junior "Major-General either of the Queen's or Company's service, so that his returning and doing "duty with his Corps could not, by any possibility, have interfered with any of the "Company's Officers, while it operated so injuriously to the individual as the senior

"Lieutenant-Colonel of a regiment, as, in addition to the extreme mortification of such "exclusion, his proper emoluments were reduced to little more than half."

49. The decision of the Home authorities was communicated to the Government of India in a Despatch from the Court of Directors of 2nd June, 1840, of which the following is an extract:—

"When the system of promotion in our service to the rank of Colonel regimentally, as "established in the year 1796, but stopped in 1805, was restored in the year 1828, there "was a distinct understanding between Her Majesty's Government and ourselves, that the "Lieutenant-Colonels of Her Majesty's regiments of Cavalry and Infantry serving in India "should not, either in the rank of Colonel or in that of Major-General, be superseded by "our Lieutenant-Colonels, who were their juniors as such in the Army. Accordingly, it "was then, and on subsequent occasions, arranged that Her Majesty's Lieutenant-Colonels "should receive local rank as Colonel, and also as Major-General, whenever their juniors as "Lieutenant-Colonel in our service were raised to those ranks respectively—to the "Colonelcy by regimental rise, and to the rank of Major-General, in virtue of the Colonelcy "so obtained.

"The rank thus to be conferred on Her Majesty's Lieutenant-Colonels was to be local "and temporary, ceasing whenever they might leave India, giving no claim whatever to "permanent rank by Royal brevet like that received by our Officers, and occasioning no "vacancy amongst the Lieutenant-Colonels of the regiment, although one or both of them "should be promoted to the local rank of Major-General. It was, in consequence, not "intended that this rank should have the effect of removing regimental Lieutenant-Colonels "from the command of their regiments, provided they were able to exercise that command "without interfering with the commands on the General Staff allotted to the Majors or "Brigadiers-General and Brigadiers of the Queen's and Company's forces respectively. If "they could not so exercise their regimental commands, it was arranged that then they "should be removed from those commands, and if possible appointed to Brigade command "in some other division in which they could serve without any such interference. If there "should be no such Brigadier's command open and available for the local Major-General so "circumstanced, it was further arranged that he should then consider of the course he would "have to take, that is he should have the option of waiving his local rank if he preferred "continuing with his Corps, or of retiring from the country, as he would do if promoted to be "a Major-General on a general brevet and not appointed to serve on the Staff, or of "remaining in India as an unemployed General Officer, receiving the pay and full batta of "his regimental rank, like Major-Generals of the Company's service residing in India "unemployed.

"These arrangements effectually secured the due allotment to the Queen's and Company's "Officers of the Divisional and Brigade Commands on the General Staff, according to the "fixed or recognized proportions applicable to each branch respectively, and also prevented "supersession amongst Officers serving together after they attained the rank of Lieu-"tenant-Colonel.

"We are now apprised that limitations have, at the suggestion of the Commander-in-"Chief in India, being placed by your Government upon the employment of the Queen's "local Major-Generals to the following extent, viz.:—

"1st. That under no circumstances shall a local Major-General be allowed to continue in "the command of his regiment.

"2nd. That Queen's Officers holding Brigade Commands shall only continue in them for "five years, at the expiration of which time they are not, without special sanction, "to be allowed to remain in India in receipt of full batta, although the regiments "to which they belong may still continue on the Indian Establishment.

"To these limitations the General Commanding-in-Chief decidedly objects, as being an "infringement on the regulations which have been sanctioned by the Home authorities, and "which Lord Hill has considered to be a satisfacory and final adjustment of the differences "upon this important subject.

"We have now to apprise you that our former orders on this subject are to be acted upon "without alteration or limitation, and you will amend your order of 20th January, 1840, to "this effect accordingly."

APPENDIX K.

MEMORANDUM on Colonel North's proposal to suspend the promotion of Colonels on the Indian List.

WITH a view to a clear understanding of the present state and future prospects of the supersession question, I have prepared the annexed lists, showing how, as far as can be estimated, the future of the two services is likely to be affected by the rules as they now stand.

The data, actual and assumed, upon which the estimates are based are:—

1st. That the present establishments of General Officers in the two services are,—
British, 272.
Indian, 173.

2nd. That, while the establishments remain as above, the rate of annual casualties will be,—
Among the British, 18.
" Indian, 11.

3rd. That the number of casualties in each year will increase or decrease proportionately, as the establishment of General Officers in either case is augmented or reduced.

4th. That on the 1st July, 1872, the name of Colonel Salmon will stand first on the Indian List for promotion, and the 10th clause of the Royal Warrant of June 1864, will then begin to operate.

5th. That no officer in the rank of Colonel in the meantime dies or retires, an assumption that can only be admitted to simplify the calculation.

A careful study of the statement will show, I think, that the rules laid down for the ultimate amalgamation of the two services are working in a perfectly satisfactory manner. Such measures are always best carried out gradually, and in the present case it could have been effected in no other manner; any attempt to dovetail the officers of the Indian Army at once into the British list would have been opposed to the resolution of Parliament, and therefore out of the question.

When we see how this is working, and consider that not above one-fourth of the officers temporarily superseded are officers of the Line on full-pay, and that a portion of these only will be found in India, is it reasonable, with the experience of the last ten years in mind, to attempt again any arbitrary measures, with a view to reconciling the present state of things with a purely conventional feeling of the British Colonels as to the point to which they may, and after which they may not, be superseded? Or is it not rather the wiser course to adopt such measures as will mitigate, and, indeed, considered in all essential characteristics, remove the present evil, satisfied that, if left to the ordinary operation of existing rules, that evil will, in the course of a few years, wholly disappear?

It is quite clear that, assuming the dates of commissions as Major-General to be rectified in the manner proposed, the British Army Colonels have nothing to fear from the Staff Corps Officers. The few officers who remain on the local Army List, are looked to as the men to be guarded against by some such extraordinary measure as suspending promotion among the Indian Colonels for several years.

Now, it must be borne in mind that the officers referred to are officers who have not been amalgamated, who have been protected by Parliament in the exercise of their right to refuse amalgamation, with its consequences, and who are, therefore, precisely in the position of Indian Officers before amalgamation was contemplated.

The present question has to be considered, therefore, quite apart from amalgamation, as one which might have arisen had the two armies continued perfectly distinct.

The Warrants of 1854 and 1858 gave to the two services two separate establishments of General Officers, and two separate lists of promotion to that grade.

Was it ever proposed to remedy the inevitable supersession of one or other of these classes of officers, by stopping the promotion of the more fortunate side?

If we put aside the purely military and professional view of the subject, and consider it as a civilian would, we shall, I think, be led to question the abstract justice of the proposal.

The British Officers say, we ought not to be placed in a position to be superseded in army rank by any one of the Indian Army who is junior to us as Colonel.

The reply of an unprejudiced man would be, of course, Why not? Why not in that rank, as well as in that of Lieutenant-Colonel, or Major, or Captain, &c.?

The only answer would be that "It is not the practice in our service under present

regulations." A few years ago, it was the Lieutenant-Colonel who was secured by the existing regulations from future supersesssion; now it is the Colonel. It is clear, therefore, that it is a purely conventional rule, or feeling, for in fact there is no such rule.

Hitherto the Guards and Line, the Artillery, Engineers, Marines, and Indian Officers, have each had their separate and independent lists, and there has been no rule against the Colonels of the one list superseding the Colonels on the other. If there were such a rule, it would be especially hurtful to the public service in its effects on those bodies whose regimental promotion is regulated by seniority, or by length of service as in the Staff Corps.

The effect of the application of the principle in the present instance would be to give to the British Officers all the advantages of rapid promotion under the purchase system to the rank of Lieutenant-Colonel, while the Indian Officers, whether under the seniority system or the Staff Corps rules, cannot generally attain to that rank within 26 years; and then to place them both on their start for the Major-General's rank according to the date of their becoming Colonels.

It is not necessary to look through the whole Army List for an illustration. I have taken one which may be an extreme case for all I know, but it was the one quoted by Colonel North. Colonel Raines, it is said, will be superseded (?) by Colonel Barr.

Colonel Raines entered the service in	1842
„ attained to Regimental Lieutenant-Colonel ..	1857
„ attained to Colonel	1858
	16 years.
Colonel Barr entered the service	1832
„ attained to Lieutenant-Colonel	1858
„ „ Colonel	1864
	32 years.

Would any man, not wedded to the existing British rule of promotion call this supersession hard and unjust?

Major-General Hamilton is now the junior Major-General of the Indian List, and is said to have superseded so many British Colonels,—

Entered the Army in	1828
Attained to Lieutenant-Colonel in	1858
„ Colonel in..	1863
	35 years.

If his promotion had been suspended until the last British officer, his senior as Colonel, was promoted, that would add about 11 years to his service, and he would become a Major-General after 46 years' service, at about the age of 64.

The fact is, the system of promotion in the two services is totally different.

In the Home service, a rapid career is open to an officer who has money and good luck, up to the grade of Colonel; and then the practice of retaining on the Colonels' List a large number of half-pay Officers tends to give a check to his further progress.

In the Indian service, the officers have heretofore been bound by the system of promotion by regimental seniority, and even under the new Staff Corps rules, no one can rise to the rank of Colonel under 31 years' service (except by distinguished service in the field); and a check in the Colonel grade similar to that in the home service will place the Indian Officers under very serious disadvantages, and, it may be feared, prove hereafter, when the amalgamation is complete, detrimental to the interests and efficiency of the service.

It appears that the supersession has attracted more notice of late from the circumstances of certain officers in India having been promoted, while young in years as well as in the Colonel's grade, to the rank of Major-General.

Such are Major-Generals Norman and Green; but it is remarkable that, though these are officers whose promotion has been accelerated by distinguished service, of the two British Colonels whose regiments are in India, and who are superseded, Goodwyn (41st Foot) is of the same season of appointment as Norman (1844), and junior to Green (1841), while Raines (95th Foot) (1842) is only two years senior to Norman, and junior in the service to Green.

July 9th, 1869. T. T. P.

APPENDIX.

PROBABLE STATE of the Major-Generals and Colonels of the British and Indian Armies, during the next Eleven Years, under the operation of the present system.

British Service.								Indian Service.										
Date.	Number of General Officers on the Establishment.	Estimated Number of Annual Casualties.	Name of Junior Major-General.	Date of Rank as Colonel, of Junior Major-General.	Date of First Commission of Junior Major-General.	Number of Officers promoted to Major-General, in supersession of one or more Colonels on the other List.	Number of Officers who have been superseded by Colonels of the other Service.	Date.	Number of General Officers on the Establishment.	Estimated Number of Annual Casualties.	Name of Junior Major-General.	Date of Rank as Colonel, of Junior Major-General.	Date of First Commission of Junior Major-General.	Number of Officers promoted to Major-General in supersession of one or more Colonels on the other List.	Number of Officers who have been superseded by Colonels of the other Service.	Difference between Date of Rank as Colonel of the two Junior Major-Generals.	Difference between Date of First Commission of the two Junior Major-Generals.	
1st July. 1869	272	18	Daubeney ..	1857 30th Sept.	1829	..	274	1st July. 1869	173	11	Hamilton ..	1863. 24th Sept.	1828	41	..	6 years	1 year..	In favour of India ..
1872	327	21	Beaumont ..	1858 26th Oct.	1824	..	327	1872	118	7	Shakespear ..	1866. 18th Feb.	1840	60	..	7 years 4 months	16 years	England
1873	331	21	Forrest ..	1860 8th March	1836	..	300	1873	114	7	Lynch	„	1827	61	..	6 years	9 years	India ..
1874	337	22	Hart	1860 27th Dec.	1829	..	270	1874	108	6	Hawthorne ..	„	1828	58	..	5 years 2 months	1 year..	„
1875	340	22	Call	1861 21st Oct.	1837	..	237	1875	105	6	Sturrock ..	„	1833	60	..	4 years 4 months	4 years	„
1876	345	22	Whitmore ..	1862 13th Aug.	1827	..	205	1876	100	6	Hervey	„	1832	52	..	3 years 6 months	5 years	England
1877	350	23	Knox.. ..	1863 19th Feb.	1831	..	170	1877	95	6	Tytler	„	1834	49	..	3 years	3 years	„
1878	356	23	Chapman ..	1863 17th Sept.	1842	..	128	1878	89	5	Tytler	„	1834	42	..	2 years 5 months	8 years	India ..
1879	360	23	Drysdale ..	1864 20th June	1835	..	83	1879	85	5	Vine	„	1833	35	..	1 year 8 months	2 years	„
1880	364	23	Brett.. ..	1865 6th May	1842	..	37	1880	81	5	Owen	„	1834	29	..	9 months ..	8 years	„

The augmented establishment for the amalgamated list will then be complete. The arrangement for fixing the Indian establishment on a reduced scale will have to be made, and for regulating the advancement of the few Indian Officers remaining.

In the preparation of the above Indian Table, the deaths among the Colonels between this time and 1880 have not been considered; but there can be no doubt but that, allowing for these, the promotion to Major-General at that time will have included 30 or 40 of the Staff Corps Officers on the amalgamated list, and that the supersession complained of will be near its end.

APPENDIX L.

Sir, *Horse Guards, 3rd September*, 1869.

WITH reference to your letter of the 26th ultimo, requesting to be furnished, for the use of the Committee on the Supersession of British Army Officers, with a Return, showing the names and services of the Colonels, Major-Generals, and Lieutenant-Generals of Her Majesty's British Forces, who have been superseded by any Officers of Her Majesty's Indian Forces since the 28th November, 1854, I am directed by the Field-Marshal Commanding-in-Chief to request that you will be good enough to acquaint the President of the Committee that the Return in question cannot be prepared in this Department, as His Royal Highness is not in possession of any records which would show the names of those Officers of the Indian Forces who have been promoted since the date referred to.

I have the honour to be,
Sir,
Your obedient servant,
W. F. FORSTER.

The Secretary
of the Committee on Supersession
of British Army Officers,
War Office.

APPENDIX M.

LIST of Lieutenant-Generals and Major-Generals of the Indian Army, superseded by Lieutenant-Generals and Major-Generals of the British Army; and of Lieutenant-Generals of the British Army superseded by Lieutenant-Generals of the Indian Army.

General	Sir H. R. F. Davie, Bart. ..	superseded	3	Lieutenant-Generals of the Indian Army		Hall, James, Sir J. Lowe.
„	Sir C. R. O'Donnell					
„	R. B. Coles					
„	E. R. Buckley					
„	G. C. Earl of Lucan	„	4	„	„	Dick, Morgan, Oliver, Hall.
„	Sir C. Yorke, G.C.B.					
„	Sir W. M. G. Colebrooke, C.B., K.H.					
„	Hon. Sir E. Cust, K.C.H ..					
„	Sir W. T. Knollys, K.C.B. ..	„	4	„	„	Oliver, Hall, James, Sir J. Lowe.
„	H. J. Delacombe	„	4	„	„	James, Sir J. Lowe, Tulloch, Cleveland.
„	J. Spink, K.H...					
„	Sir J. Jackson, K.C.B., K.H...	„	5	„	„	Young, Dick, Morgan, Oliver, Hall.
„	J. Drummond					
„	F. J. Davies					
„	M. Beresford	„	6	„	„	Dick, Morgan, Oliver, Hall, James, Sir John Lowe.
„	Sir J. C. Chatterton					
„	Sir J. M. F. Smith, K.H. ..	„	7	„	„	Young, Dick, Morgan, Oliver, Hall, James, Sir J. Lowe.
„	W. Wylde, C.B.	„	8	„	„	James, Sir J. Lowe, Tulloch, Cleveland, Soppitt, Moore, Worrall, McLeod
„	Sir W. F. Williams, Bart., K.C.B.	„	9	„	„	Moore, Worrall, McLeod, Parsons, Warren, Taylor, Dowker, Garnault, Hawker.
„	Sir J. E. Dupuis, K.C.B. ..	„	9	„	„	Bell instead of Moore.
„	F. R. Chesney	„	11	„	„	Tulloch, Cleveland, Soppitt, Moore, Worrall, McLeod, Parsons, Warren, Taylor, Dowker, Garnault.
„	Sir R. J. Dacres, K.C.B. ..	„	12	„	„	Tulloch, Cleveland, Soppitt, Moore, Worrall, McLeod, Parsons, Warren, Taylor, Dowker, Garnault, Hawkes.
„	Sir F. Graham, K.C.B. ..	„	14	„	„	Sir J. Lowe, Tulloch, Cleveland, Soppitt, Moore, Worrall, McLeod, Parsons, Warren, Taylor, Dowker, Garnault, Hawkes, Bell.
„	J. T. Blown					
„	E. Garstin	„	19	„	„	Tulloch, Cleveland, Soppitt, Moore, Worrall, McLeod, Parsons, Warren, Taylor, Dowker, Garnault, Hawkes, Bell, Wilkinson, Taylor, Williams, Farrell, Alexander, Luard.

Lieut.-Gen.	J. Alexander, C.B.	superseded	6	Lt.-Gens. and Maj.-Gens. of the Indian Army		Prescott to Nash inclusive
"	J. T. Lane, C.B.					
"	E. Hathwaite, C.B.	"	7	"	"	Prescott to Hancock "
"	Sir A. Wilson, Bart., G.C.B.	"	9	"	"	Prescott to Lister "
"	G. Campbell	"	12		"	J. Nash to T. Polwhele "
"	C. Grant	"	14	"	"	J. Nash to J. F. Bradford "
"	J. Longfield, C.B.	"	23	"	"	T. M. Cameron to W. G. White "
"	C. W. M. Balders, C.B.	"	24	"	"	T. M. Cameron to J. Fitzgerald "
"	R. B. Wood, C.B.	"	26	"	"	J. Nash to M. Carthew "
"	F. H. G. Seymour					
"	W. A. M'Cleverty					
"	L. D. Williams					
"	J. T. Hill	"	26	"	"	Sir J. C. Coffin to W. G. White "
"	C. E. Gold	"	27	"	"	J. Nash to C. Douglas "
"	J. Hale					
"	C. A. Lewis					
"	R. Law, K.H.	"	27	"	"	W. Prescott to N. Jones "
"	Sir C. T. Van Straubenzee, K.C.B.	"	28	"	"	W. Prescott to J. C. C. Gray "
"	M. G. Gold					
"	W. Parlby	"	28	"	"	J. Nash to W. G. White "
"	T. G. Higgins	"	29	"	"	T. L. Green to H. Hancock "
"	J. Patton	"	29	"	"	C. Hamilton to E. Messeter "
"	A. C. Pole	"	29	"	"	W. Prescott to C. Holl "
"	C. Ashmore	"	29	"	"	R. Budd to C. M. Carthew "
"	H. K. Bloomfield					
"	J. Lawrenson					
"	S. J. Hodgson					
"	E. Sabine	"	30	"	"	J. K. Luard to J. Nash "
"	H. Eyre	"	30	"	"	J. A. Howden to A. S. Logan "
"	Sir D. A. Cameron, K.C.B.	"	30	"	"	C. Hamilton to H. Macau "
"	T. Matheson					
"	Sir G. Bell, K.C.B.					
"	E. W. F. Walker, C.B.	"	30	"	"	W. Prescott to C. Hewitson "
"	C. Stuart	"	30	"	"	H. Lawrence to M. Carthew "
"	Hon. Sir A. A. Spencer, K.C.B.					
"	Sir W. Bell, K.C.B.	"	31	"	"	T. L. Green to F. G. Lister "
"	G. A. Malcolm, C.B.	"	31	"	"	T. B. Forster to A. S. Logan "
"	R. R. Robertson, C.B.	"	31	"	"	E. Armstrong to C. Wahab "
"	T. A. Drought	"	31	"	"	W. Prescott to M. Carthew "
"	Lord W. Paulet, K.C.B.	"	31	"	"	J. A. Howden to E. Messeter "
"	Sir R. Airey, G.C.B.	"	33	"	"	J. Parsons to W. J. Browne "
"	Sir J. Y. Scarlett, K.C.B.					
"	Sir G. Buller, K.C.B.					
"	Sir J. B. Gough, K.C.B.					
"	Hon. A. Upton					
"	C. C. Hay	"	33	"	"	G. Huyshe to A. S. Logan "
"	L. Braybrooke	"	33	"	"	E. Armstrong to N. Jones "
"	Sir R. P. Douglas, Bart.	"	34	"	"	H. C. M. Cox to A. S. Logan "
"	Sir A. J. Clarke, K.C.B., K.H.	"	36	"	"	J. Parsons to H. Cracklow "
"	G. Macdonald					
"	Sir C. A. Windham, K.C.B.					
"	R. Greaves	"	38	"	"	J. Garnault to J. Nash "
"	Sir J. Michel, K.C.B.	"	38	"	"	J. Yaldwin to A. S. Logan "
"	Sir W. H. Elliott, K.C.B., K.H.	"	39	"	"	J. Garnault to H. Hancock "
"	P. Taylor, K.H.					
"	J. Campbell	"	39	"	"	R. Hawkes to Sir J. C. Coffin "
"	Sir W. B. Ingleby, K.C.B.	"	39	"	"	C. Hamilton to C. Douglas "
"	T. H. Johnstone	"	40	"	"	J. Garnault to Sir J. C. Coffin "
"	H. A. Hankey					
"	H. D. Townsend	"	40	"	"	R. Hawkes to F. G. Lister "
"	E. H. D. E. Napier	"	40	"	"	F. Straton to A. S. Logan "
"	R. J. Stotherd	"	41	"	"	C. Hamilton to J. Fitzgerald
"	J. R. Crawford	"	43	"	"	J. Parsons to J. Nash "
"	W. S. Balfour					
"	P. V. England	"	42	"	"	T. L. Green to J. F. Bradford "
"	H. Goodwyn	"	42	"	"	T. B. Fowler to C. Douglas "
"	M. Williams	"	42	"	"	J. A. Howden to W. G. White "

Lieut.-Gen. F. Johnstone							
„ Sir E. Macarthur, K.C.B...							
„ D. H. Macdowal							
„ Sir R. Garrett, K.C.B., K.H.	superseded	42	Lt.-Gens. and Maj.-Gens. of the Indian Army				T. L. Green to A. S. Logan inclusive
„ G. T. Colomb							
„ Sir S. J. Cotton, K.C.B. ..							
„ M. Barlow							
„ T. Wood							
„ W. H. Eden	„	45	„	„	„		J. Bell to H. Prior „
„ Sir J. Hope Grant, G.C.B.							
„ S. Baynes							
„ M. C. Johnstone	„	45	„	„	„		J. K. Luard to A. S. Logan „
„ W. F. Forster, K.H. ..							
„ J. Clarke							
„ Sir J. G. Le Marchant, K.C.B.	„	46	„	„	„		J. Bell to L. S. Bird „
„ C. Gascoyne							
„ W. N. Hutchinson ..	„	46	„	„	„		R. Alexander to A. S. Logan „
„ Sir J. Bloomfield, K.C.B...	„	47	„	„	„		F. Straton to J. C. C. Gray „
„ F. Warde	„	47	„	„	„		W. L. Williams to M. Carthew „
„ Sir W. R. Mansfield, K.C.B.							
„ G. Moncrieff	„	48	„	„	„		J. Bell to T. Polwhele „
„ Sir E. Lugard, G.C.B. ..	„	48	„	„	„		C. D. Wilkinson to P. Innes „
„ Hon. A. A. Dalzell ..							
„ Sir T. S. Pratt	„	48	„	„	„		J. E. Williams to A. S. Logan „
„ M. J. Slade							
„ G. H. Mackinnon, C.B. ..	„	49	„	„	„		C. D. Wilkinson to J. F. Bradford „
„ R. C. Lord Napier, G.C.B.	„	49	„	„	„		T. B. Forster to R. St. John „
„ Viscount G. F. Templeton, C.B.	„	50	„	„	„		C. D. Wilkinson to A. S. Logan „
„ T. Foster	„	50	„	„	„		T. L. Green to J. C. C. Gray „
„ B. Willis	„	53	„	„	„		J. Garnault to A. S. Logan „
„ W. Scott	„	55	„	„	„		T. B. Forster to J. Hobson „
„ Sir A. T. Cotton	„	58	„	„	„		T. B. Forster to F. Rowcroft „
„ H. Servante	„	59	„	„	„		H. Dick to W. Lang „
„ D. Thorndike	„	62	„	„	„		J. Nash to J. Welchman „
„ R. Burn	„	65	„	„	„		R. Budd to J. Welchman „
„ B. Cuppage..	„	70	„	„	„		E. Armstrong to W. C. Macleod „
„ A. T. Tulloh, C.B. ..	„	79	„	„	„		J. A. Howden to W. R. A. Freeman „
„ T. Lemon, C.B.	„	82	„	„	„		J. Campbell to W. F. Beatson „
„ H. Pester	„	87	„	„	„		J. Bell to J. Macdonald „
„ F. Dunlop, C.B.	„	97	„	„	„		H. Lawrence to Sir E. L. Russell „

APPENDIX N.

EXTRACT from Return ordered by the House of Commons to be printed, 27th July, 1863.

No. 22.

RETURN showing the Number and Grades of Officers of the respective Arms of the Three Armies of India, and the Total Number and Grades for all India, who Retired on Extra Annuities, as also the Number in these several Grades in lieu of whom Advancement has been given to the Officers remaining in the Service, either joining the Staff Corps, or remaining on the old Conditions of Service; distinguishing the Number and Grades of Officers of the Staff Corps to whom Promotions have been given in the Regimental Lists, from the Number and Grades of Officers on the old Conditions of Service to whom

Advancement has actually been given consequent on the Retirements; showing also the Number of the several Grades of the several Arms of the Service in the respective Armies in which the promotions have been made.

		Artillery.	Engineers.	Cavalry.	Infantry.	Total.
Bengal	Lieutenant-Colonels	..	..	9	47	56
	Majors	..	..	4	42	46
	Captains	1	..	3	27	31
Madras	Lieutenant-Colonels	3	4	7	42	56
	Majors	..	..	8	25	33
	Captains	..	..	6	36	42
Bombay	Lieutenant-Colonels	1	..	..	21	22
	Majors	..	..	1	13	14
	Captains	..	..	..	4	4
India	Lieutenant-Colonels	4	4	16	110	134
	Majors	..	..	13	80	93
	Captains	1	..	9	67	77

Number of Lieutenant-Colonels retired on annuity in Bengal, 56, in lieu of whom 30 Majors were made Lieutenant-Colonels, and of these seven are in the Staff corps.

Number of Lieutenant-Colonels in Madras were 56, in lieu of whom 32 Majors were made Lieutenant-Colonels, of whom six are in the Staff corps.

Number of Lieutenant-Colonels in Bombay were 22, in lieu of whom 11 Majors were made Lieutenant-Colonels, of whom three are in the Staff corps.

Number of Majors retired on annuity in Bengal, 46, in lieu of whom 46 Captains were made Majors, of whom about twenty are in the Staff corps.

Number of Majors who retired on annuities in Madras were 33, in lieu of whom 33 Captains were made Majors, and of these about twelve are in the Staff corps.

Number of Majors who retired on annuities in Bombay were 14, in lieu of whom 14 Captains were made Majors, and of these about six are in the Staff corps.

Number of Captains who retired on annuities in Bengal were 31, in lieu of whom 31 Lieutenants were made Captains, and of these about fifteen are in the Staff corps.

Number of Captains who retired on annuities in Madras were 42, in lieu of whom 42 Lieutenants were made Captains, and of these about twenty are in the Staff corps.

Number of Captains who retired on annuities in Bombay were 4, in lieu of whom 4 Lieutenants were made Captains, and of these one is in the Staff corps.

(Signed) T. T. Pears,
Major-General, Military Secretary.

ia Office,
27th Ju- 863.

APPENDIX O.

Extract from Despatch of the Secretary of State for India, 17th June, 1864.

"In the opinion of the Commission, the extensive promotion made under the Staff Corps "Rules unnecessarily gave superior rank to many of the Indian Officers selected for those corps, "and caused extensive supersession to the officers remaining with their regiments.

"66. It is evident that a complete remedy for this supersession in army rank must be found "either in the withdrawal of the rank given to the Staff Corps Officers, or in granting such "army rank to the officers of the Indian Army as shall restore them to the relative position, as "regards the Staff Corps Officers, which they held before the formation of those corps.

"67. Her Majesty's Government would have been very reluctant to adopt the first of "these two courses, which must have been productive of much embarrassment and disappoint-"ment to a very large class of deserving officers, while the replacing of those officers in their "regiments would not have been without its disadvantages, even to the complainants "themselves.

"68. It has been considered, therefore, that the only satisfactory course open to the "Government is to confer upon the officers of the Indian Army generally such army rank as

" shall entirely remove all ground for complaint upon this head, by restoring to all who had " been superseded the relative position, as regards the Staff Corps Officers, which they held " before the formation of those corps.

" 69. Her Majesty's Government believe that the object in view can be effectually " attained, by an extension of a system which has for many years existed in India of giving " brevet rank by length of service, heretofore applicable only to the promotion of subalterns, and " by granting to the officers of the Indian Service army rank under the following rules, the " adoption of which has, with the concurrence of His Royal Highness the Field-Marshal " Commanding-in-Chief, been determined upon, viz. :—

" That all officers whose commissions bear date on or before the 18th February, 1849, " shall be promoted to the rank of Captain by brevet.

" All officers whose first commissions bear date on or prior to 18th February, 1841, shall " be promoted to the rank of Major by brevet; and

" All officers whose first commissions bear date on or prior to 18th February, 1835, shall " be promoted to the rank of Lieutenant-Colonel by brevet; all such promotions to bear date " 18th February, 1861.

" After the 18th February, 1861, officers of the several Staff Corps, and of Her Majesty's " Indian Army generally, shall be granted brevet rank under the following regulations:—

After 12 years' standing in the Army from date of first commission, to be ..	Captains.
After 20 years' ditto ditto	Majors.
„ 26 „ „ „	Lieutenant-Colonels.

" On and after the 18th February, 1866, all officers who have served 31 years on full pay, " five of which shall have been in the grade of Lieutenant-Colonel, to be promoted to the rank of " Colonel by brevet.

" 70. His Royal Highness the Field-Marshal Commanding-in-Chief has expressed his " intention of recommending to Her Majesty that the officers of the British Army serving in " India, including the ordnance corps, shall have army local rank in India conferred upon them " after precisely the same periods of service and under the same rules, special provision being " also made in cases where Line and Indian Officers may serve together elsewhere.

" 71. It is to be understood that the system of promotion to brevet rank now introduced, " will cease in its application to the several grades of the army on the extinction of those grades " among the officers of the Indian Army. Thus, when the whole of the Lieutenants of the " Indian Army shall have been promoted to the rank of Captain, the promotion of officers in the " Staff Corps to the brevet rank of Captain under the above rule will be discontinued, and so " on with the higher grades."

APPENDIX P.

Extract from Royal Warrant on Pay and Promotion, dated 3rd February, 1866.

Amalgamation of British and Indian Establishments.

" 19. *There shall be a List (A.) of Indian General Officers, to which all Indian Officers " shall be promoted from the present Indian List, until all who were Colonels in the Indian " Royal Artillery or Engineers, or Lieutenants-Colonels in Our Indian Staff Corps, before the " 18th February, 1861, shall have succeeded to the rank of Major-General according to Indian* regulations. Major-Generals shall rise on this list until transferred under Articles 24 or 27.

" 20. There shall also be three other lists as follows:—

" (B.) A list of all Colonels of British Cavalry, Guards and Line, and of those " Colonels of Indian Staff Corps who had not attained the rank of Lieutenant- " Colonel before the 18th February, 1861.

" (C.) A list of Colonels and officers of lower rank of Royal Indian Artillery, " promoted on or after 18th February, 1861.

" (D.) A list of Colonels and officers of lower rank of Royal Indian Engineers " promoted on or after 18th February, 1861.

" 21. From (B.) promotion shall be made direct to the British Establishment.

" From (C.) promotion shall be made intermediately to a List (E.) of General Officers of " Indian Artillery.

" From (D.) promotion shall be made intermediately to a List (F.) of General Officers of " Indian Engineers.

" 22. When the junior officer on Lists (C.) and (D.) respectively shall have been

" promoted to Lists (E.) and (F.), promotion shall thenceforward be made to the British " Establishment, the officers on such lists being incorporated with it.

" 23. When a vacancy shall occur on List (A.), to which a Colonel of the Staff Corps " on List (B.) would have succeeded had promotion to List (A.) been continued, an addition " of one shall be made to the first branch of the British Establishment, by the promotion to it " of the senior qualified Colonel of that branch on List (B.), whether he be a British Officer " or an Officer brought in from the Staff Corps. This shall continue until the number of " General Officers added to the British Establishment, including the first transfer, shall be one " for every twenty-eight Combatant Officers in the three Staff Corps.

" 24. On the first such addition being made under Article 23, the General Officers of the " Staff Corps on List (A.) shall be tranferred to the British Establishment, which shall be " increased by the same number as the Indian Establishment will be diminished by such " transfer.

" 25. Promotion into List (A.) shall, after the transfer provided for in Article 24, be " limited to Officers of Cavalry and Infantry of Our late Indian Army, who shall not have " joined Our Indian Staff Corps.

" 26. As the number of General Officers on the first branch of the British Establishment " increases, under the operation of Article 23, the establishment of Generals, Lieutenant- " Generals, and Major-Generals shall be from time to time so adjusted as to maintain as nearly " as may be the proportions now existing in the British Service; but any reductions that may " be requisite shall be made only by gradual absorption of every third vacancy amongst super- " numeraries in the higher grades."

APPENDIX Q.

RETURN of the 12 Senior Colonels of the British Army who succeeded to the Fixed Establishment of Line General Officers next after the issue of the Memorandum in the Gazette of 1st May, 1855.

Name.	Date of First Commission.	Lieut.-Colonel.	Colonel.	Major-General.
Sir A. J. Cloete	29 June, 1809	10 Jan. 1837	11 Nov. 1851	31 Aug. 1855
G. Macdonald	5 Sept. 1805	" "	" "	7 Sept. "
J. Cox	16 Mar. 1808	17 Feb. "	" "	18 Dec. "
J. R. Craufurd	14 June, 1821	18 " "	" "	19 June, 1856
W. S. Balfour	8 Feb. "	24 " "	" "	22 Aug. "
W. Booth	8 May, 1806	11 July "	" "	23 Sept. "
R. Greaves	25 June, 1812	29 Sept. "	" "	9 Nov. "
Lord C. Wellesley	16 Jan. 1824	29 Dec. "	" "	8 Dec. "
W. H. Elliott	6 Dec. 1809	27 June, 1838	" "	29 Jan. 1857
W. F. Williams	30 Aug. 1810	28 " "	" "	14 April "
P. Taylor	15 Aug. 1811	" "	" "	16 May, "
J. H. Johnston	21 Feb. 1822	28 Dec. "	" "	4 June, "

RETURN of 12 Senior Colonels of the Indian Army, promoted to be Major-Generals next after the issue of the Memorandum in the Gazette of 1st May, 1855.

Name.	Date of First Commission.	Lieut.-Colonel.	Colonel.	Major-General.
J. D. Syers	27 April 1818	9 Aug. 1843	1 Feb. 1854	7 May, 1855
G. Grantham	14 May, 1814	17 " "	15 April "	3 Aug. "
H. Cracklow	23 Dec. 1819	19 " "	" "	15 Sept. "
W. Prescott	26 June 1817	28 " "	" "	" "
H. Laurence	1 Nov. 1811	3 Nov. "	" "	5 Dec. "
R. Budd	11 June, 1812	11 " "	7 May "	10 Feb. 1856
G. Hicks	7 Sept. 1808	13 Mar. 1844	" "	18 " "
H. F. Caley	21 Oct. 1807	16 April "	20 June, "	18 Mar. "
H. Dick	28 Sept. 1808	30 " "	" "	2 April "
J. Nash	1 Nov. 1814	" "	" "	9 " "
J. Alexander	16 June, 1820	" "	" "	18 May "
I. J. Lane..	9 June, 1821	" "	" "	8 June "

RETURN of the 12 Senior Colonels of the British Army promoted to the Fixed Establishment of General Officers after the 26th October, 1858.

Name.	Date of First Commission.	Lieut.-Colonel.	Colonel.	Major-General.
W. R. Ord, R.E.	25 April 1809	18 Mar. 1845	17 Feb. 1854	1 Nov. 1858
H. Eyre, Unattached, Infantry ..	28 Aug. 1817	17 Mar. 1843	20 June, „	16 „ „
H. J. Savage, R.E.	30 Sept. 1809	22 May, 1845	21 Mar. „	23 „ „
Lord W. Paulet, Cavalry ..	1 Feb. 1821	21 April 1843	20 June, „	13 Dec. „
P. McPherson, Infantry	2 Nov. 1809	4 July, „	„ „	24 „ „
R. S. Armstrong, R.A.	17 Dec. 1807	9 Nov. 1846	„ „	16 Jan. 1859
C. W. Ridley, C.B., Gren. Gds. ..	21 Feb. 1828	14 July, 1843	„ „	13 Feb. „
J. Patton, Infantry	18 Sept. 1817	18 Aug. „	„ „	20 „ „
D. A. Cameron, Infantry.. ..	8 Aug. 1825	5 Sept. „	„ „	25 Mar. „
T. Matheson, Unattached ..	17 Aug. 1815	17 Nov. „	„ „	2 April „
S. Bell, Infantry	14 Mar. 1811	5 Dec. „	„ „	9 „ „
H. T. Vigors, Infantry	12 April 1827	15 Dec. „	„ „	1 May „

RETURN of 12 Senior Colonels of the Indian Army promoted to be Major-Generals after the 26th October, 1858.

Name.	Date of First Commission.	Lieut.-Colonel.	Colonel.	Major-General.
A. Shirreff	11 July, 1815	28 Aug. 1846	20 June, 1854	14 Nov. 1858
E. Messiter	6 April 1820	7 Dec. „	„ „	23 „ „
H. Macan	4 Jan. 1821	29 „ „	„ „	5 Mar. „
W. Sage	13 Dec. 1809	19 Feb. 1847	28 Nov. „	13 „ „
J. Shiel	4 Mar. 1820	11 Mar. „	„ „	26 April „
C. Wahab	6 April „	16 „ „	„ „	6 May „
J. Manson..	14 Sept. 1808	24 April „	„ „	15 „ „
G. Tremlow	6 Aug. 1812	1 July, „	„ „	17 „ „
T. A. Duke	13 Feb. 1821	14 „ „	„ „	24 „ „
N. Jones	9 June, 1817	12 Aug. „	„ „	30 „ „
J. Gray	12 July, 1814	27 „ „	„ „	20 July „
T. D. Carpenter	6 April 1820	1 Sept. „	„ „	29 „ „

RETURN of 12 Senior Colonels of the British Army promoted to the Fixed Establishment of General Officers, after 1st April, 1862.

Name.	Date of First Commission.	Lieut.-Colonel.	Colonel.	Major-General.
B. T. Stehelin, R.E.	1 Aug. 1816	19 Sept. 1853	28 Nov. 1854	3 April 1862
Sir R. Walpole, Infantry ..	11 May, 1825	2 July, 1847	„ „	30 May „
Hon. G. Cadogan, Gren. Gds. ..	.. ..	6 Aug. „	„ „	3 June „
A. J. Laurence, Infantry.. ..	4 April 1827	1 „ „	„ „	1 „ „
J. C. H. Gibsone, Cavalry ..	8 Oct. 1830	3 Sept. „	„ „	28 „ „
C. P. Ainslie, Cavalry	10 April 1825	22 Oct. „	„ „	7 July, „
F. Murray, Infantry	24 Feb. „	5 Nov. „	„ „	13 Aug. „
Hon. A. N. Hood, Scots Fus. Gds.	.. ..	„ „	„ „	19 „ „
D. Russell, Infantry	10 Jan. 1828	10 Dec. „	„ „	3 Sept. „
H. Shirley, Infantry	12 May, 1825	18 Jan. 1848	„ „	24 Oct. „
W. S. Newton, Cold. Gds. ..	.. ..	25 Feb. „	„ „	6 Nov. „
E. C. W. Milman, Infantry ..	24 April 1835	7 April „	„ „	9 „ „

RETURN of the 12 Senior Colonels of the Indian Army, promoted to be Major-Generals after 1st April, 1862.

Name.	Date of First Commission.	Lieut.-Colonel.	Colonel.	Major-General.
A. T. Cotton	16 June, 1820	10 April 1850	28 Nov. 1854	14 April 1862
G. Macan	1 Dec. 1819	15 May „	„ „	20 „ „
H. Troup	16 July, 1820	13 Aug. „	„ „	10 June, „
G. Jameson	27 April „	24 „ „	„ „	15 „ „
— Ramsay	21 Mar. 1821	28 Sept. „	„ „	1 July „
H. Lyons	8 July, 1818	21 Oct. „	„ „	16 „ „
A. Bogle	13 Mar. 1823	17 Feb. 1851	„ „	2 Aug. „
R. Bayly	28 Feb. 1820	23 „ „	„ „	6 Sept. „
D. Simpson	16 Aug. 1819	15 Mar. „	„ „	2 Oct. „
J. Barstow	13 „ 1814	17 „ „	„ „	5 „ „
— Cumberlege	31 Dec. 1819	7 April „	„ „	22 Nov. „
— Macdonald	4 April 1821	11 „ „	„ „	12 Dec. „

RETURN of the last 12 Colonels of the British Army promoted to the Fixed Establishment of General Officers.

Name.	Regiment.	Date of First Commission.	Lieut.-Colonel.	Colonel.	Maj.-General.
Thomas Brooke, C.B. ..	12th Ft., h.-p.	31 Oct. 1834	19 May, 1854	28 Nov. 1854	29 Nov. 1868
Henry Dalrymple White, C.B.	—	11 May, 1838	1 June, „	„ „	2 Dec. „
W. S. Ramsay Norcott, C.B.	Unattached ..	13 June, 1822	12 Dec. „	29 June, 1855	10 Dec. „
Daniel Lysons, C.B... ..	—	26 Dec. 1834	21 Sept. „	17 July, „	27 Dec. „
Earl of Longford, K.C.B. ..	—	25 Aug. 1837	12 Dec. „	„ „	31 Dec. „
H. S. H. Prince W. A. E. of Saxe-Weimar, C.B.	Gren. Guards	1 June, 1841	„ „	5 Oct. „	23 Feb. 1869
Sir Archibald Little, K.C.B.	9th Lncrs., h.-p.	4 Oct. 1831	20 June, „	20 June 1857	21 Mar. „
John Douglas, C.B.	Depôt Bn., h.-p.	18 June, 1829	„ „	„ „	25 Mar. „
Sir John Douglas, K.C.B. ..	Unattached ..	6 Sept. 1833	„ „	1 Aug. „	12 May, „
H. C. Barnston Daubeney, C.B.	71st Foot, h.-p.	12 Mar. 1829	„ „	30 Sept. „	14 June, „
Hon. R. W. Penn Curzon, C.B.	Gren. Gds., h.-p.	Never.	„ „	17 Nov. 1857	3 Aug. „
T. Tapp, C.B.	103rd Foot ..	1 Jan. 1822	28 Nov. „	28 Nov. „	5 Sept. „

RETURN of the last 12 Colonels of the Indian Army, promoted to be Major-Generals.

Name.	Date of First Commission.	Lieut.-Colonel.	Colonel.	Major-General.
W. K. Babington	8 Jan. 1826	18 June, 1859	12 Dec. 1862	22 April, 1868
S. C. Briggs	6 May, 1825	20 July, „	6 Jan. 1863	28 June, „
L. S. Hough	21 Dec. 1834	19 Jan. 1858	19 Jan. „	16 Aug. „
H. W. Blake	13 Dec. 1836	29 Aug. 1859	12 Mar. „	19 Oct. „
R. G. Taylor	26 Feb. 1840	21 Dec. „	3 April, „	28 Oct. „
W. F. Nuthall	9 Dec. 1836	16 June 1860	21 April, „	9 Nov. „
M. Galwey	11 Dec. 1835	24 Mar. 1858	9 May, „	10 Nov. „
A. Fytche..	11 Dec. 1838	26 June, 1860	10 June, „	18 Nov. „
D. M. Stewart	12 Oct. 1840	20 July, 1858	20 July, „	24 Dec. „
H. W. Norman	1 Mar. 1844	4 Dec. 1860	8 Sept. „	23 Mar. 1869
G. W. G. Green	12 June, 1841	24 Mar. 1858	22 Sept. „	30 Mar. „
R. Hamilton	3 Jan. 1828	20 July, „	24 Sept. „	8 May, „

APPENDIX R.

LIST of Colonels promoted to be Major-Generals on the Fixed Establishment of the Line and Guards, of the British Army, between 1st January, 1867, and 30th November 1869.

1867.

D. Rainier	6 January.	J. J. Bissett	8 March.
H. H. Graham	20 „	J. Armstrong	6 July.
H. Rening	2 February.	E. A. Holdich	3 September.
G. Campbell	4 „	R. N. Phillips	8 December.

1868

Sir A. H. Horsford ..	1 January.	H. Smyth	9 May.
W. D. P. Patton ..	1 „	Lord M. Kerr	12 July.
G. J. Carey	21 „	H. W. Whitfield ..	13 August.
Hon. P. G. Herbert ..	28 „	J. Wilkie..	25 „
A. Barton	31 „	H. P. De Bathe	29 „
D. E. Mackirdy	21 February.	R. Waddy	10 November.
J. S. Brownrigg.. ..	13 March.	T. H. Tidy	22 „
W. M. S. McMurdo ..	27 „	E. Haythorne	23 „
W. Munro	29 „	T. Brooke	29 „
A. C. Errington	9 April.	H. D. White	2 December.
C. A. Edwards	19 „	W. S. R. Norcott ..	10 „
S. T. Christie	21 „	D. Lysons	27 „
W. M. Wood	1 May.	Earl of Longford.. ..	31 „

1869

Prince of Saxe-Weimar..	23 February.	Hon. R. W. P. Curzon ..	3 August.
Sir E. R. Wetherall ..	8 March.	T. Tapp	5 September.
A. Little	21 „	Sir T. W. McMahon ..	23 „
J. Douglas	25 „	A. Maxwell	24 October.
Sir J. Douglas	12 May.	R. T. Farren	28 „
H. C. B. Daubeney ..	14 June.		

APPENDIX S.

STATEMENT of Number of Officers on Full and Half-Pay in the British and Indian Armies.

Number of	Guards and Line.		Royal Artillery.		Royal Engineers.		Royal Marines.		Indian Army.	Staff Corps for British List.	Total.		
	Full-Pay.	Half-Pay.	Full-Pay.	Half-Pay.	Full-Pay.	Half-Pay.	Full-Pay.	Half-Pay.			Full-Pay.	Half-Pay.	Total.
Colonels..	163	185	133	1	73	..	16	1	135	74	594	187	781
Lieutenant-Colonels ..	241	137	122	10	55	1	14	1	684	..	1,116	149	1,265
Majors	402	136	48	5	29	2	20	3	616	..	1,115	146	1,261
Captains	1,694	287	503	70	223	14	168	61	984	..	3,572	432	4,004
Lieutenants	2,254	298	689	22	371	5	243	89	666	..	4,223	414	4,637
Cornets and Ensigns ..	1,573	54	..	..	..	..	..	..	..	..	1,573	54	1,627
Total	6,327	1,097	1,495	108	751	22	461	155	3,085	74	13,193	1,382	13,575

ARMY (SUPERSESSION OF COLONELS).

RETURN to an Address of the Honourable The House of Commons, dated 11 July 1871;—*for*,

"COPY of any CORRESPONDENCE between the War Department and the India Office on the subject of SUPERSESSION of COLONELS in the BRITISH ESTABLISHMENT since the Report of the Select Committee of the House of Commons, in the Session of 1870."

War Office, 14 July 1871.

EDWARD CARDWELL.

— No. 1. —

(20—General No.—977.)

The Under Secretary of State for War to the Under Secretary of State, India Office.

Sir, War Office, 4 August 1870.

I AM directed by Mr. Secretary Cardwell to transmit to you, for the consideration of the Duke of Argyll, the accompanying copy of the Report of a Select Committee of the House of Commons on the subject of the supersession of British by Indian colonels; and I am to request that you will move his Grace to say, if he is prepared to adopt the recommendation of the Committee, that, from the 26th ultimo, an amalgamated list of colonels be formed from the British List, the Staff Corps, and the Indian Local Lists; and that from such amalgamated list all promotions to the rank of major general be made by seniority, according to the dates of colonels' commissions.

I am also to inquire if the Duke of Argyll sees any objection to future promotions of Indian officers being suspended while the question raised by the Select Committee shall be under consideration.

I am, &c.
(signed) *Edward Lugard.*

— No. 2. —

(No. 3500—737 W.)

The Military Secretary, India Office, to the Under Secretary of State for War.

Sir, India Office, S.W., 2 September 1870.

I AM directed by the Secretary of State for India in Council to acknowledge the receipt of your letter of the 4th ultimo, transmitting for the consideration of the Duke of Argyll the Report of the Select Committee of the House of Commons on the subject of the supersession of British by Indian colonels, and requesting to be informed if his Grace is prepared to adopt the recommendation of the Committee, that, from the 26th July last, an amalgamated list of colonels be formed from the British List, the Staff Corps, and the Indian Lists, and that from such amalgamated list all promotions to the rank of major general be made by seniority according to the dates of colonels' commissions.

20. General No. 977.

2. In reply, I am instructed to state that the Duke of Argyll is not prepared to accept the recommendation of the Select Committee, which, as regards the officers on the Indian Local Lists, is at variance with the opinion expressed in Paragraph 80 of the Report of the Royal Commission under the presidency of Lord Cranworth, and which was deliberately acquiesced in by Her Majesty's Government.

3. His Grace is further of opinion that the time already fixed for the amalgamation of the lists of colonels of the British Army and of the Staff Corps, in the Royal Warrant of 15 June 1864, and which time is already close at hand, could not conveniently be anticipated.

No. 954 — 205/W.

4. Moreover, in agreeing to the arrangement specified in General Pear's letter of the 4th March 1870, the Duke of Argyll considers that he has already fairly met the complaints of the British officers, and that any further concessions prejudicial to the interests of the officers of the Indian Army would involve new and serious difficulties.

5. He trusts, therefore, that the proposal to suspend the future promotion of the Indian officers while the question raised by the Select Committee shall be under consideration will not be pressed.

I have, &c.
(signed) *J. Pattison Thom,*
For the Military Secretary.

— No. 3. —

(20—General No.—981.)

The Under Secretary of State for War to the Under Secretary of State, India Office.

Sir, War Office, 8 September 1870.

I AM directed by Mr. Secretary Cardwell to acknowledge the receipt of Mr. Thom's letter of the 2nd instant upon the subject of the supersession of British by Indian colonels, and, in reply, to request that you will state to the Duke of Argyll that, as Her Majesty's Government have assented to the appointment of a Committee of the House of Commons to consider this question, and as the Chancellor of the Exchequer served upon it, and concurred in its Report, it appears to Mr. Cardwell that, until the final decision of the Government shall have been taken, any further promotions of Indian officers in contravention of the Report must of necessity be suspended.

I have, &c.
(signed) *Edward Lugard.*

— No. 4. —

(No. 3803—787 W.)

The Military Secretary, India Office, to the Under Secretary of State for War.

Sir, India Office, S.W., 23 September 1870.

20. / General No. / 981.

I AM directed by the Secretary of State for India in Council to acknowledge the receipt of your letter of the 8th instant, stating that, as Her Majesty's Government consented to the appointment of a Committee of the House of Commons to consider the question of the supersession of British colonels by those of the Indian Army, and as the Chancellor of the Exchequer served on the Committee, and concurred in its Report, it appears to Mr. Cardwell that, until the final decision of the Government shall have been taken, any further promotions of Indian officers, in contravention of the Report, must of necessity be suspended.

2. In

2. In reply I am desired to state that although the Duke of Argyll sees no reason to alter the views expressed in the letter from this office of the 2nd instant, nevertheless he will not object to a suspension of further proceedings for the present, until the final decision of Her Majesty's Government has been taken, and will therefore give instructions that no more names of Indian officers be, for the present, submitted for promotion to the rank of major general on the Indian List.

I have, &c.
(signed) *T. T. Pears,*
Major General, Military Secretary.

— No. 5. —

(No. 134 H.)

The Military Secretary, India Office, to the Military Secretary, Horse Guards.

Sir, India Office, S.W., 3 March 1871.

1. I AM directed by the Secretary of State for India in Council to forward a list of proposed promotions amongst the general and retired officers of Her Majesty's Indian Military Forces.

2. No promotion from the rank of colonel to that of major general is proposed at present, but it appears to the Duke of Argyll that the suspension of such promotion need not affect advancement from one grade of general officer to another.

3. Promotion to the ranks of lieutenant general and general, in the vacancy caused by the death of General Podmore, are therefore submitted.

I have, &c.
(signed) *T. T. Pears,*
Major General, Military Secretary.

— No. 6. —

(H. Gds. No. 61013—7).

The Military Secretary, Horse Guards, to the Under Secretary of State, India Office.

Sir, Horse Guards, 30 March 1871.

I AM directed by the Field Marshal Commanding-in-Chief to acknowledge the receipt of your letter of the 3rd instant, and to acquaint you in reply that His Royal Highness will submit to Her Majesty, in due course, the names of the retired officers of Her Majesty's Indian Military Forces who are recommended for a step of honorary rank.

As regards the promotions to general and lieutenant general in consequence of the death of General R. Podmore, Madras Infantry, it has been arranged, as doubtless the Secretary of State for India in Council is already aware, to suspend further action until a decision has been come to on the general question reported on by the Royal Commission relative to the supersession of British officers.

I have, &c.
(signed) *W. F. Forster.*

— No 7 —

(20.—Genl. No.—1013).

The Under Secretary of State for War to the Under Secretary of State, India Office.

Sir. War Office, 4 April 1871.

I AM directed by Mr. Secretary Cardwell to transmit to you the enclosed copy of the Report of the Royal Commission, presided over by Lord Cairns, upon the subject of the legality of carrying into effect the recommendation made in 1870 by a Select Committee of the House of Commons, that an amalgamated list be formed of the colonels of Her Majesty's British and Indian Forces. Adverting to previous correspondence on this question, I am to state, for the consideration of the Secretary of State for India in Council, that Mr. Cardwell is of opinion that it is necessary to take some steps for giving effect to the Report of the Committee of the House of Commons, and for remedying the injustice of which the colonels of the British Establishment complain. After the Report, however, of the Royal Commission, it appears to be necessary to obtain further powers from Parliament, since it is at least doubtful whether the formation of an amalgamated list, as recommended by the Committee, would not be at variance with the Acts of 1858 and 1860.

It appears to Mr. Cardwell that, if the amalgamation of the two armies had taken place while the East India Company still retained its separate existence, and could, therefore, have entered upon the arrangement on behalf of the officers of the Indian establishment, equitably protecting the rights of those officers, an amalgamated list would have been formed, and that complete justice cannot now be done to the British officers without the formation of such a list.

Mr. Cardwell therefore proposes, in concert with the Secretary of State for India in Council, to agree, if possible, upon such a list to be now framed, and then to ask Parliament for power to give effect to it by a Royal Warrant.

In framing the amalgamated list, it seems to Mr. Cardwell that those officers who have risen unexpectedly, by the large retirements given to Indian officers, and consequently enjoy a much higher position than was expected at the time either of the two Acts was passed, cannot justly complain if their enjoyment is limited so as not to involve the supersession of officers on the British Establishment, their seniors; and that, in order to give effect to the equity of the Parliamentary guarantee, these officers should be placed accordingly on the proposed list.

With respect to the officers who have been already superseded, it will be observed that the provision already made for ante-dating their commissions will place them in their proper position on the amalgamated list.

I am to request the concurrence of the Secretary of State for India in the proposed arrangement.

I am, &c.
(signed) *Edward Lugard.*

— No. 8. —

(No. 493. W).

The Military Secretary, India Office, to the Under Secretary of State for War.

Sir, India Office, S.W., 7 July 1871.

20. General No. 1013.

1. I AM directed by the Secretary of State for India to acknowledge the receipt of your letter of the 4th April, transmitting copy of the Report of the Royal Commission, presided over by Lord Cairns, upon the subject of the legality of carrying into effect the recommendation made in 1870, by a Select Committee of the House of Commons, that an amalgamated list be formed of the colonels of Her Majesty's British and Indian Forces, and stating, with advertence to previous correspondence on the subject, " that Mr. Cardwell is of opinion

opinion that it is necessary to take some steps for giving effect to the Report of the Committee of the House of Commons, and for remedying the injustice of which the colonels of the British Establishment complain," but that after the Report of the Royal Commission, it appears to be necessary to obtain further powers from Parliament.

2. In support of this view of the subject, it is stated in your letter that, "if the amalgamation of the two armies had taken place while the East India Company still retained its separate existence, and could, therefore, have entered upon the arrangement on behalf of the officers of the Indian establishment, equitably protecting the rights of those officers, an amalgamated list would have been formed, and that complete justice cannot now be done to the British officers without the formation of such a list."

3. "Mr. Cardwell therefore proposes, in concert with the Secretary of State for India in Council, to agree, if possible, upon such a list to be now framed, and then to ask Parliament for power to give effect to it by a Royal Warrant."

4. In reply I am instructed to make the following observations, and to request that they may be submitted for Mr. Cardwell's consideration.

5. In the first place I am to point out that, when, by the issue of the Royal Warrants of the 14th October 1858, and 31st January 1859, separate establishments of general officers were formed for the British and Indian service respectively, a rule was laid down by which the officers of each service should rise to the rank of major general wholly irrespectively of each other, in succession to vacancies in those several lists, and it must have been foreseen and admitted that the officers on each list would of necessity attain the rank of major general without any reference to the rank or position of officers of the other service.

6. Mr. Cardwell will observe, moreover, that, even as regards each service considered in itself, the determination of the starting point for promotion under ordinary circumstances to the grade of general officer is purely arbitrary and variable. A few years ago it was the rank of lieutenant colonel which placed an officer in the position to rise by seniority to that of major general; more recently, under revised rules, the rank of colonel has become the starting point.

7. It cannot, therefore, in the opinion of the Duke of Argyll, be said that any injustice is done to the one service or the other, so long as the regulations of each service are strictly administered, and no preference is shown to the one or the other, when serving together, in the distribution of commands.

8. While, however, unable to admit that any principle of justice has been violated by the maintenance of the practice established by the Warrant of 1859, under which the officers of the Indian Army rise to the rank of general officers, his Grace does recognise, in the abnormal rapidity with which some of those have risen, and may hereafter rise, to that grade (mainly in consequence of certain measures carried into effect at the time of the reorganisation of the Indian Army, no measures of a corresponding character having been adopted in the British Army), sufficient cause for a certain amount of jealousy on the part of the officers of corresponding rank in the British Army, and his Grace has already shown his readiness to make large concessions towards its removal.

9. With this view, Mr. Cardwell will recollect that the following arrangements have already been accepted, viz.—

1st. That all colonels of the British Army promoted subsequent to the 6th March 1868 shall, on promotion, have their major general's rank so dated as to place them in the same relative position as to the major generals of the Indian Army promoted on and after that date, that they held as colonels.

2nd. The rank of major general conferred on the officers of the Indian army since the 3rd May 1870, has been and is to be made local until the colonel of next senior date on the British list may become a major general.

 10. It

10. It was also proposed in my letter of the 4th March 1870, paragraph 8, that "every case of a colonel of Her Majesty's army serving in India who might be brought into a position of official subordination to a general officer of the Indian army, junior to him as a colonel, should be specially considered and dealt with, by granting some compensation for the temporary loss of regimental command, should he be indisposed to serve under the other's command. Considering the small number of military appointments in India held by major generals of the Indian army," the Duke of Argyll expressed a confident expectation "that the authorities in India would be able to make such arrangements as will render these cases very rare indeed."

11. The Duke of Argyll regrets to have observed that these arrangements have not appeared to a Select Committee of the House of Commons to be sufficient for the occasion, and that they have proposed an immediate amalgamation of the lists of colonels of the two armies, with a view to promotion to the rank of major general in succession to vacancies on either list being given to the senior colonel, to whichever service he may belong.

12. As the measure is pronounced by a Royal Commission, presided over by Lord Cairns, to be inconsistent with the Parliamentary guarantee given to the officers of the Indian army in Acts 21 & 22 Vict. c. 106, s. 56, and 23 & 24 Vict. c. 100, Mr. Cardwell now proposes to bring in a Bill for the purpose of carrying the same into effect.

13. Mr. Cardwell will remember that at the time of the promulgation of the Royal Warrant of 15th June 1864, there were in the Indian service two classes of officers to be considered and dealt with, viz.:—

1st. Those who had joined the staff corps.

2nd. Those who had remained in the Indian local service.

14. It was assumed that the officers who had joined the staff corps might be at some future period amalgamated with the officers of the British army for army promotion, while those who had not, could not be so amalgamated without infringement of the guarantee

15. While recognising the injury to the public service that must result from the continued existence of a source of irritation and jealousy between the officers of the two services, already in process of becoming one, the Duke of Argyll cannot consider that in the proposal of the Select Committee sufficient consideration has been shown to the claims and prospects of the Indian army; and his Grace desires me therefore to suggest an arangement which, made under Parliamentary sanction, might prove satisfactory to the military authorities in this country, and, having in view the advantages in regard to substantive promotion which they have gained from other causes, not inequitable as affecting the interests of the Indian officers.

16. Of the staff corps and local colonels, who, under the Warrant of June 1864, were to rise together on the Indian list before the officers of the staff corps and those of the British list were amalgamated, eight remain unpromoted, exclusive of Colonel Probyn, who, though not gazetted, may be considered as promoted, under any circumstances, by a casualty which occurred before the date of the Select Committee's Report; of these eight, seven are very old officers, and the Duke of Argyll considers it fair to them that the promotion to which they have looked for so many years should be secured to them.

17. Should Mr. Cardwell agree in this view of their claims, and in the propriety of allowing their promotion to proceed on the Indian list, the Duke of Argyll will not object to the introduction into Parliament of a Bill under which the whole of the officers upon the Indian list shall be transferred for army promotion to the British list, according to their date of rank, so soon as these eight officers shall have been promoted or otherwise become casualties. His Grace is less disinclined to adopt this measure, and thereby set at rest for ever this embarrassing question, from the consideration that, if such a transfer was, in the case of the staff corps officers, under the Warrant of 1864, not considered inequitable by reason of the various benefits derived by them from the reorganisation of the Indian army, it is still less to be objected to as affecting the local officers, whose substantive promotion has been greatly accelerated by the

the action of Government at various times, and to so great an extent recently, as to give rise to complaints of supersession on the part of their brother officers now in the staff corps.

18. Bearing in mind also that early promotion to the rank of major general is by no means an unmixed advantage to officers of the army, his Grace has every reason to hope that, although the measure now proposed is calculated to delay the promotion of the officers affected by it several years, as compared with their present prospect on the Indian list, those officers will remember that they are still substantially in a better position than they could have been had no changes in the organisation of the Indian army taken place since 1860, while the public service will be benefited by the final and complete removal of all grounds of dissatisfaction and jealousy between the several branches of Her Majesty's service in the matter of army promotion.

19. A letter has lately been received from the Government of India relating to this subject, which I am instructed to forward for Mr. Cardwell's perusal. In this letter the Government of India observe, with reference to a memorial from Colonel Colin Mackenzie, C.B., one of the eight officers referred to above, that "the proposed measure" (*i.e.*, that recommended by the Select Committee) "would almost indefinitely delay the promotion of the officers referred to by the Commander in Chief, who have an average service of more than 40 years and six months, and who have a present right to their promotion under regulations which have been in force for over six years."

20. Should the proposal now offered be accepted by Mr. Cardwell, the Duke of Argyll considers it desirable that a distinct understanding should be arrived at upon the two following points:—

1st. The principle upon which the charge which will fall upon the War Office, by the promotion of an additional number of British major generals on the amalgamated list, shall be provided for; and,

2ndly. The manner in which the number of general officers surplus to the proper establishment shall be reduced, when the two lists shall have been formed into one.

21. With regard to the first point, the Duke of Argyll would propose, as a fair and convenient arrangement, at all events until the amalgamated list of general officers shall have been brought to its normal proportions, that in every case of a colonel of the British service being promoted to the rank of major general, and being found in excess of the establishment of general officers due to that service, a charge equivalent to the difference between the colonels and the major generals' pay shall be made against the Indian Government and *vice versâ*.

22. With regard to the second point, as it is evident that, when the two lists of general officers are united, the aggregate number will be in excess of that due to the number of officers in the two services combined, his Grace would recommend that, as soon as the amalgamation takes place, an establishment shall be duly authorised for the united services, and the supernumeraries absorbed at the rate of one vacancy lapsing to every four casualties.

I have, &c.
(signed) *T. T. Pears*,
Major General, Military Secretary.

— No. 9. —

(20—General No.—1025.)

The Under Secretary of State for War to the Under Secretary of State, India Office.

Sir, War Office, 10 July 1871.

I HAVE laid before Mr. Secretary. Cardwell Sir T. Pears' letter of the 7th instant, No. 493 W., relative to the measures to be adopted for preventing supersession between the officers of Her Majesty's British and Indian forces. In reply, I am to state, for the information of the Duke of Argyll, that, under all the circumstances, Mr. Cardwell will bring into Parliament a Bill to authorise the carrying into effect the recommendation of the Select Committee of the House of Commons, with the qualification suggested by his Grace.

I am, &c.
(signed) *Edward Lugard.*

ARMY (SUPERSESSION OF COLONELS.)

COPY of CORRESPONDENCE between the War Department and the India Office on the subject of SUPERSESSION of COLONELS in the BRITISH ESTABLISHMENT since the Report of the Select Committee of the House of Commons in the Session of 1870.

(*Mr. Secretary Cardwell.*)

Ordered, by The House of Commons, *to be Printed,*
17 *July* 1871.

ARMY (SUPERSESSION OF COLONELS).

FURTHER RETURN to an Address of the Honourable The House of Commons, dated 18 May 1870;—*for*,

"COPY of CORRESPONDENCE between the War Office, the India Office, and Horse Guards, respecting the SUPERSESSION of COLONELS of HER MAJESTY'S BRITISH ARMY by the COLONELS of HER MAJESTY'S INDIAN FORCES."

War Office, June 1870. } EDWARD CARDWELL.

(No. 2137—451—W.)

The Military Secretary, India Office, to the Under Secretary of State for War.

Sir, India Office, S. W., 27 May 1870.

I AM directed by the Secretary of State for India in Council to acknowledge the receipt of your letter of the 17th instant, enclosing a copy of one from the Horse Guards, on the subject of the measures which it is proposed to adopt, in order to remedy, as far as possible, the recent supersession of officers of the British Army by Indian officers promoted to the rank of major general, and stating that, with the limitations suggested by the Field Marshal Commanding in Chief, Mr. Cardwell accepts the proposals of this office for the settlement of the question.

2. In reply I am desired to state, with reference to the suggestion contained in my letter of the 4th of March last, that the rectification of rank should be carried back to the earliest period, subsequent to the 28th November 1854, that may be consistent with the convenience of the service, that the Duke of Argyll recognizes the force of the objections urged by His Royal Highness to any attempt to alter the relative rank of the major generals promoted before the removal of the names of the Indian Artillery from the general list of the Indian Army.

3. I am accordingly desired to express the concurrence of the Duke of Argyll, in the proposition that all major generals of the British Army who have been promoted to that grade since the 6th of March 1868 shall receive commissions in that rank, dated on that day, and that in future all British colonels on being promoted to the rank of major general, shall receive commissions bearing such a date as will retain them in the same position, relatively to officers of the Indian Army, which they held as colonel. The commissions of the major generals of Artillery, Engineers, and Marines, will also, it is understood, be so dated as to place them immediately above the colonel of the Guards or Line who is first promoted after them to the rank of major general, and that position will be retained by them so long as they respectively remain in that grade.

4. With regard to the promotion of the colonels of the Indian Army to the rank of major general, I am directed to request that the promotions which have already been submitted in the room of existing vacancies may be now completed without further delay, and to state that others will be submitted to fill vacancies which have recently occurred, as also those which are necessary in consequence of the readjustment of the numbers of generals, lieutenant generals, and major generals in the Indian Army, so as to assimilate them to the

the proportion existing in the British Army. The corresponding numbers in the Indian Army will be 33 of the grade of full general, 53 lieutenant generals, and 87 major generals.

5. The Duke of Argyll also desires me to express his assent to the arrangement that the rank of major general on the Indian List shall be made local only in the case of all promotions dated after a notification to that effect shall have been issued, the rank being made general as then dated, as soon as the colonel of next senior date becomes a major general.

6. In the case of a major general of the British Army serving in India thinking it right to decline a command, owing to the necessity, if he were to accept it, of his serving under an officer of the Indian Army, whose rank as colonel was junior to his own, the Duke of Argyll will be prepared to consider the circumstances, with a view to such compensation being given as may seem to be called for.

7. The proposed modification of the Royal Warrant of the 15th June 1864, with the view of keeping within due limits the promotion to the rank of major general of the surviving local Indian officers, after the removal from the Indian Lists of the names of all officers of the staff corps, will be dealt with on the receipt of a reply to the Despatch addressed to the Government of India on the subject.

I have, &c.
(signed) *T. T. Pears.*
Major General, Military Secretary.

(20—General No.—955.)

The Under Secretary of State for War to the Military Secretary, Horse Guards.

Sir, War Office, 1 June 1870.

I AM directed by Mr. Secretary Cardwell to transmit to you, for submission to the Field Marshal Commanding in Chief, the accompanying copy of a letter from the India Office, having reference to yours of the 7th ultimo, on the subject of the supersession of British officers by officers of Her Majesty's Indian Forces, and to request you will move his Royal Highness to be so good as to take the necessary steps for publishing in the London Gazette, as soon as possible, the intended readjustment of the dates of the major generals' commissions, and for inserting a notification respecting the local rank to be held by major generals of the Indian Army.

27th May 1870.

I have, &c.
(signed) *Edward Lugard.*

From the London Gazette, 3 June 1870.

War Office, Pall Mall, 3 June 1870.

MEMORANDUM, dated Horse Guards, 3 May 1870.

WITH a view to obviating, as far as possible, any difficulties that might arise from the present unequal promotion to the rank of major general of colonels of the British and Indian Lists respectively, it is Her Majesty's pleasure that so much of the Horse Guards Memorandum, dated 25th April 1855, as may refer to officers of the Indian Army promoted hereafter to the rank of major general, shall be temporarily suspended; and that until further orders the rank of major general conferred under the first clause of the Regulations attached to the Royal Warrant, dated 15th June 1864, on an officer of the Indian List, shall be local until the colonel of the Guards or Line of the British List, immediately senior to him as colonel, may become a major general, when the rank

rank of the officer of the Indian List, as then held, will be made general, such antedate being given to the commission of the colonel of the British Army promoted to be major general as will place the two officers in the same relative position as major generals as they held as colonels.

In thus giving an antedate to the commissions as major generals of officers who have been, or may be hereafter, promoted on the Imperial Lists, and extending the same principle whenever necessary to the major generals of the Artillery, Engineers, and Marines, it is not intended in anyway to interfere with the relative positions which the major generals of the several branches of the British Service may now, or may hereafter, hold among themselves under the operation of the ordinary and existing system of promotion.

ARMY (SUPERSESSION OF COLONELS).

FURTHER RETURN.

COPY of CORRESPONDENCE between the War Office, the India Office, and Horse Guards, respecting the SUPERSESSION of COLONELS of HER MAJESTY'S BRITISH ARMY by the COLONELS of HER MAJESTY'S INDIAN FORCES.

(*Mr. Cardwell.*)

Ordered, by The House of Commons, *to be Printed,*
27 *June* 1870.

BOMBAY BRANCH
OF THE
Royal Asiatic Society.
CLASS

256—I.

Under 1 *oz.*

ARMY (SUPERSESSION OF COLONELS).

RETURN to an Address of the Honourable The House of Commons, dated 18 May 1870;—*for*,

"COPY of CORRESPONDENCE between the War Office, the India Office, and Horse Guards, respecting the SUPERSESSION of COLONELS of HER MAJESTY'S BRITISH ARMY by the COLONELS of HER MAJESTY'S INDIAN FORCES."

War Office, 23 May 1870. } EDWARD CARDWELL.

(20—General No.—883.)

The Under Secretary of State for War to the Military Secretary, India Office.

Sir, War Office, 6 January 1870.

I AM directed by Mr. Secretary Cardwell to transmit to you, for the information of the Secretary of State for India in Council, the accompanying original Report of the Committee appointed to consider the question of the Supersession of Colonels of Her Majesty's British Army by those of Her Majesty's Indian Forces. 15 December 1869.

I am, &c.
(signed) *Edward Lugard.*

(322—83—W.)

The Military Secretary, India Office, to the Under Secretary of State for War.

Sir, India Office, S.W., 22 January 1870.

I AM directed by the Secretary of State for India in Council to acknowledge the receipt of your letter of the 6th instant, and, in reply, to request that he may be favoured with the views of the Secretary of State for War, respecting the proposals of the Committee appointed to consider the question of the Supersession of British Colonels by those of Her Majesty's Indian Service.

I have, &c.
(signed) *T. T. Pears,*
Major General, Military Secretary.

(20—General No.—890.)

The Under Secretary of State for War to the Military Secretary, India Office.

Sir, War Office, 7 February 1870.

WITH reference to your letter of 22nd ultimo, on the subject of the Report of the Committee appointed to consider the question of the Supersession of Colonels of Her Majesty's British Army by those of Her Majesty's Indian Forces, I am directed by Mr. Secretary Cardwell to request you will state to the Secretary of State for India in Council that he concurs in the views ex-

 pressed

pressed by the Committee as to the circumstances which have led to the present inequality of promotion in the two armies; but he is of opinion that the *prospective* measures proposed in paras. 100 and 105 of the Report (of which a copy is annexed), are insufficient to meet the reasonable requirements of the British officers, and fall short of the partial remedy proposed by Mr. Cardwell, and accepted by his Grace the Duke of Argyll in the correspondence quoted in the margin.

War Office letters of 24 March and 9 April 1869. India Office letters of 16 April and 18 May 1869.

Under these circumstances Mr. Cardwell is of opinion that it would be advisable to adopt the course pointed out by General Sir Charles Yorke and Lieutenant General Sir Duncan Cameron in their dissent at page 19 of the Report, and I am to request you will move the Duke of Argyll to give his concurrence to this measure.

I have, &c.
(signed) *Edward Lugard.*

(954—205—W.)

The Military Secretary, India Office, to the Under Secretary of State for War.

Sir, India Office, S.W., 4 March 1870.

I AM directed by the Secretary of State for India in Council to acknowledge the receipt of your letter of the 7th ultimo, in which it is stated, with reference to the recent Report of the Committee of which Vice Chancellor Sir W. M. James was President, that Mr. Cardwell is of opinion that the prospective measures proposed in paras. 100 and 105 of the Report are insufficient to meet the reasonable requirements of the British officer, and fall short of the partial remedy proposed by Mr. Cardwell, and accepted by the Duke of Argyll in recent correspondence, and that under the circumstances it seems advisable to adopt the course pointed out by General Sir Charles Yorke and Lieutenant General Sir D. Cameron in their dissent at page 19 of the Report.

2. In reply, I am directed to state that as Mr. Cardwell does not consider the remedy proposed by the majority of the Committee to be sufficient, the Duke of Argyll is quite prepared to consider the question again on its merits, with such assistance as may be derived from the inquiries of the Committee and the opinions of its several members.

3. Having then again considered the whole subject, his Grace is quite willing, 1st, That the adjustment of rank proposed in the 99th and following paragraphs of the Committee's Report be made retrospective, and to apply to the case of the present general officers whose commissions as colonels bear date at the earliest period subsequent to 28th November 1854, that may be consistent with the convenience of the service, upon the understanding that the inequality in the relative number of generals and lieutenant generals, noticed in the last paragraph of the Report, be at the same time rectified by a re-adjustment of the proportion in these several grades in the India list.

4. The Duke of Argyll will also not object to the rank of major general conferred on the officers of the Indian army being made local in all future cases, until the colonel of next senior date on the British list may become a major general, when the rank, as then dated and held, will be made general.

5. With regard to the re-introduction of the system of "Fane" major generals in India, I am to observe that this course has been already concurred in by the Secretary of State for India, but upon a reconsideration of the subject, the Duke of Argyll is of opinion that, under the altered circumstances of the services, it would be inexpedient again to have recourse to this measure.

6. It will be remembered that formerly, when the system was in operation in India, it applied to a few officers only, who, being colonels in the British service of high standing, were in command of regiments or brigades in that country, and who might be superseded as colonels by officers of the Indian army more fortunate in their advancement to the rank of major general.

7. But

7 But were the practice now revived, it would apply in the course of the next two or three years to the whole of the colonels of the several Staff Corps, and of the Artillery and Engineers serving in India, and in every case of a colonel on the Indian local list, few and far between though they may be, being promoted to major general, however little such promotion might interfere with the substantial interests of the officers on the amalgamated British list, a considerable number of officers serving in various positions, civil and military, in India would have to be promoted to major general, and his Grace considers that far greater embarrassment and injury to the public service would arise from the remedy, than from the evil which it is proposed to obviate.

8. He would propose, therefore, that in every case of a colonel of Her Majesty's army serving in India, who might be brought into a position of official subordination to a general officer of the Indian army junior to him as a colonel, should be specially considered and dealt with, by granting some compensation for the temporary loss of regimental command, should he be indisposed to serve under the other's command. Considering the small number of military appointments in India held by major generals of the Indian army, the Duke of Argyll confidently expects that the authorities in India will be able to make such arrangements as will render these cases very rare indeed.

9. At the same time I am to point out that both lines of promotion are established and maintained under Royal Warrants, and that an officer of the Indian army promoted under such warrant to the rank of major general is legitimately and under the highest sanction the superior officer of all colonels of Her Majesty's service who may not have attained to that grade.

10. In conclusion, I am to request you will inform Mr. Cardwell that the Duke of Argyll proposes shortly to recommend to Her Majesty's sanction such modification of the Royal Warrant of the 15th June 1864 as shall admit of the introduction of the system proposed in the Despatch to the Government of India, No. 7, dated 13th January 1869, copy of which was forwarded to you with my letter of the 6th August 1869, under which he believes that the promotion to the rank of major general of the few officers who may survive and remain on the list of the local army, until the attainment of that rank, will be regulated and kept within due limits.

I have, &c.
(signed) *T. T. Pears*,
Major General, Military Secretary.

(20—General No.—927.)

The Under Secretary of State for War to the Military Secretary, Horse Guards.

Sir, War Office, 9 March 1870.

I AM directed by Mr. Secretary Cardwell to transmit to you, for the consideration of His Royal Highness the Field Marshal Commanding in Chief, copy of a letter dated 7th ultimo, addressed by his direction to the Military Secretary of the India Office, together with copy of Major General Pears' reply thereto, dated 4th instant, conveying the views of His Grace the Secretary of State for India, regarding the measures to be adopted with reference to the supersession of British officers by officers of Her Majesty's Indian Forces.

I have, &c.
(signed) *Edward Lugard.*

The Military Secretary, Horse Guards, to the Under Secretary of State, War Office.

Sir, Horse Guards, 7 May 1870.

1. In continuation of former correspondence, I have now, by desire of the Field Marshal Commanding in Chief, to acknowledge the receipt of your letter of the 9th March last, forwarding a copy of a communication of the 4th idem, from the India Office, conveying the views of the Secretary of State for India in Council on the measures to be adopted with reference to the supersession of officers of the British army by those of Her Majesty's Indian Forces.

2. It having been intimated to the Duke of Cambridge that the proposal of the committee presided over by Colonel Egerton, and recommended by His Royal Highness, namely, to make an immediate addition to the number of major generals of the British army, in anticipation of the future establishment of general officers, cannot be entertained by Her Majesty's Government, it has become necessary, in accordance with the wishes of the Secretary of State for War, to ascertain how far the other proposals put forward with the view of remedying the supersession complained of are calculated to meet that object, and to what extent they are capable of practical application.

3. From the lengthened correspondence on this subject, and the frequent personal discussions which have taken place between the Secretaries of State for War, and for India in Council, and the Field Marshal Commanding in Chief, the Duke of Argyll and Mr. Cardwell are aware of the difficulties which present themselves to every attempted solution of this most complicated question; but in finally deciding on the measures to be adopted, it may be deemed advisable to place on record the reasons, mutually concurred in, which render the complete adoption of the first of the measures suggested by General Sir Charles Yorke and Lieutenant General Sir Duncan Cameron, and accepted by the Duke of Argyll, objectionable and undesirable.

4. In my letter of the 17th June 1869, it was pointed out that the complete rectification of the dates of the commissions of all the major generals whose colonelcies bear date on or after the 28th November 1854, could not be carried into effect without compromising the interests of the officers of the Ordnance Corps, the position of several of whom in relation to each other and to general officers of the line would be seriously affected, and His Royal Highness is now anxious to explain more fully the difficulties referred to in that communication.

5. Mr. Cardwell is aware that under existing Warrants guiding the promotion of the several branches of the army, officers of the old Royal Artillery, Engineers, and Marines rise to the rank of major general on three separate lists, distinct from that of the Line, and that according to the casualties of the several branches of the service, such officers attain and enjoy that rank without reference to the position they hold with each other and with the colonels of the Line.

6. On the other hand, the officers of the former Indian Artillery and Engineers, previous to the 6th March 1868, rose to be major generals on an entirely different system, as they attained that rank according to their position as colonels on the general list of the whole Indian army. On that date, however, in accordance with the provisions of the Royal Warrant of 1864, the officers of the former Indian Ordnance Corps were finally removed from the Indian List, and formed into distinct and separate lists of their own. There are thus at the present time seven separate lists on which the several branches of the two armies respectively rise to be major generals; viz., the General List of the Guards and Line, the old Royal Artillery List, the old Royal Engineer List, the Royal Marine List, the former Indian Artillery List, the former Indian Engineers' List, and, finally, the General List of the Indian Line. Up to the 6th March 1868, there were five. It is evident, therefore, that with all these separate lists it has been impossible so to regulate promotion as to preclude the possibility of supersession of one list of officers by others; and if it be attempted to place them all on a supposed equality, by the rectification of the dates of the commissions

commissions of all the major generals whose colonelcies date from or after the 28th November 1854, in accordance with what has been suggested, it can only be done by depriving very many of the old Royal Artillery, and Engineers' and Royal Marine major generals of the position and seniority they now hold by virtue of Royal Warrant; and, as it appears to the Duke of Cambridge that such a course would be most detrimental to the interests of those officers, His Royal Highness cannot concur in its adoption.

7. If on the other hand it should be proposed to leave the old Royal Artillery and Engineers and the Marine major generals in their present positions, as regards the major generals of the Guards and Line, and to place the Ordnance officers who rose to be major generals on the Indian List in their position on the Imperial List of Guards and Line, according to their seniority as colonels, it would be found that certain Indian Ordnance officers would be placed below officers of the old Ordnance List who are actually junior to them, not only as major generals, but also as colonels and lieutenant colonels, an anomaly which, when pointed out, cannot, His Royal Highness believes, be contemplated.

8. It will be seen, therefore, though difficult of explanation without reference to an Army List in which the actual working of the proposal has been illustrated, how impossible it would be to fuse the British and Indian lists of generals according to their seniority as colonels, from the 28th November 1854, without causing very extensive changes and re-adjustment, of such a nature as could not fail to give rise to further dissatisfaction and to create fresh grievances.

9. It has been suggested, as a means of obviating the difficulty as regards the Ordnance and Marine officers, that the whole of those officers, whether they have risen on Imperial or Indian lists, should be left exactly where they now stand in relation to each other and to the Guards and Line generals, and that the rectification of dates should be applied only to the two general lists of the Line; viz., Imperial and Indian. A major general of the former Indian Artillery or Engineers would thus retain the exact position he now holds on the Imperial List, in relation to the Guards and Line and to the old Ordnance Corps and Marines; but to this proposal a serious objection presents itself, as was pointed out at the last discussion that was held on this subject, which appears fatal to its adoption; viz., that it would involve the supersession of major generals of the Indian army by certain major generals of the Ordnance Corps who rose with and were junior to them on the same Indian List.

10. His Royal Highness has thus endeavoured to explain why it appears to him impossible to carry back the rectification of dates to the extent recommended, and that to attempt to do so would not only produce a state of things as objectionable as that which it is proposed to remedy, but would give rise to further supersession and fresh complications which on every account it is obviously most desirable to avoid.

11. On these considerations, the Field Marshal Commanding in Chief would propose, as recommended in my letter of the 17th June 1869, that the rectification of dates of commission should apply only to such officers as have been or may be promoted to be major generals on or after the 6th March 1868. Thus the commissions of all those major generals of the British Army who have been promoted since that date would be antedated to the 6th March 1868, and all colonels of the British List who may hereafter be promoted would receive such dates to their commissions as major generals as will place them in their proper position relatively with the Indian officers, according to their dates as colonels.

12. The 6th March 1868 suggests itself to His Royal Highness as the legitimate period from which the re-adjustment of rank between the two Services should have retrospective effect, as it is the date on which the late Indian Artillery were removed from the Indian Generals' List, and a large addition made to the latter in consequence; it is, moreover, the date on which the Royal Warrant of 1864, in supersession of that of 1862, virtually came into operation with a result injurious to the interests of the colonels of the British Army.

13. If these views be adopted, His Royal Highness considers that the position of major generals of Artillery, Engineers, and Marines respectively, should be regulated by that of the Guards or Line officers promoted immediately after them, *i.e.*, the commission of a general officer of Artillery, Engineers, or Marines would be so dated in regulating his standing with officers of the Indian Army as to ensure his preceding the Guards or Line colonel first promoted after him, and immediately above whom on the list he would continue so long as they may respectively remain major generals.

14. In regard to the Duke of Argyll's proposal, that the inequality in the relative number of generals and lieutenant generals, noticed in the last paragraph of the Report of Sir William James' Committee, be rectified by a re-adjustment of the proportion in these several grades in assimilation to the proportions existing in the British Army, the Duke of Cambridge concurs, and suggests that the necessary promotions be made accordingly.

15. The proposal that the rank of major general conferred on the officers of the Indian Army be made local in all future cases until the colonel of next senior date on the British List may become a major general, when the rank as then dated will be made general, having been accepted by the Secretary of State for India in Council has, as Mr. Cardwell is aware, been submitted to the Queen, and received Her Majesty's approval.

16. The Secretary of State for India in Council has pointed out in the 5th, 6th, and 7th paragraphs of Major General Pears' letter, the objections which present themselves to the re-introduction, under the altered circumstances of the Services, of the system of the "Fane" major generals in India, and in the Duke of Argyll's opinions on the subject His Royal Highness concurs.

17. His Royal Highness further concurs in his Grace's proposal that, as it is inexpedient to re-introduce the "Fane" system, every case of a colonel of Her Majesty's British Army serving in India who might be brought into a position of official subordination to a general officer of the India Army junior to him as a colonel, should be specially considered and dealt with by granting some compensation for the temporary loss of regimental command, should he be indisposed to serve under the other's command.

18. In conclusion I am to express, with reference to the last paragraph of Major General Pears' letter, the Duke of Cambridge's entire concurrence in the advisability of obtaining Her Majesty's sanction to such modification of the Royal Warrant of 15th June 1864, as will regulate and keep within due limits the promotion to the rank of major general of the officers who may survive and remain on the list of the local army until the attainment of that rank.

I have, &c.
(signed) *W. F. Forster.*

(20—General No. 946.)

The Under Secretary of State for War to the Military Secretary, India Office.

Sir, War Office, 17 May 1870.

YOUR letter of the 4th March last, in reply to mine of 7th February, on the subject of the supersession of British officers by officers of Her Majesty's Indian Forces, having been referred for the consideration of the Field Marshal Commanding in Chief, I am directed by Mr. Secretary Cardwell to transmit to you, for submission to the Secretary of State for India in Council, the accompanying letter from the Military Secretary, Horse Guards, dated 7th instant, expressing the views of His Royal Highness on the several points connected with this question.

In

In bringing this communication under the notice of the Duke of Argyll, Mr. Cardwell desires me to say that, with the limitations suggested by the Field Marshal Commanding in Chief, the proposals of the India Office for the settlement, so far as circumstances will now admit of a satisfactory settlement of this very difficult and complicated question, are accepted by this department.

I have, &c.
(signed) *Edward Lugard.*

ARMY (SUPERSESSION OF COLONELS).

COPY of CORRESPONDENCE between the War Office, the India Office, and Horse Guards, respecting the SUPERSESSION of COLONELS of HER MAJESTY'S BRITISH ARMY by the COLONELS of HER MAJESTY'S INDIAN FORCES.

(*Mr. Cardwell.*)

Ordered, by The House of Commons, *to be Printed,*
24 *May* 1870.

256.

Under 1 *oz.*

ARMY (SUPERCESSION OF OFFICERS

RETURN to an Address of the Honourable The House of Commons, dated 4 May 1869;—*for*,

"COPY of any CORRESPONDENCE which has taken place from OFFICERS of the QUEEN'S ARMY, complaining of their SUPERCESSION by JUNIOR OFFICERS of the INDIAN ARMY, promoted under a recent Warrant."

War Office, 6 May 1869.

EDWARD CARDWELL.

— No. 1. —

General *W. R. Mansfield* to the Military Secretary.

Sir, Head Quarters, Simla, 13 August 1865.

I HAVE the honour, with much deference, to solicit the attention of His Royal Highness the Field Marshal Commanding in Chief, to some very important considerations affecting the position of the superior officers of Her Majesty's British forces. Thus, under the operation of the rules of promotion in the several services, the following full Colonels of the British Army now serving in India, viz.: Colonel T. Williams,* C. B., 4th Foot; Colonel D. Rainier, 98th Foot; Colonel E. A. Holdich, C. B., 20th Foot; Colonel A. C. Errington, 51st Foot; Colonel S. T. Christie, C. B., 80th Foot; Colonel E. Haythorne, 1st Foot, have been superseded in India by the promotion to the rank of General Officer of Colonels in the local service.†

2. It is seen that all the colonels on the local lists in India of the year 1856 are now promoted to the effective rank of Major General.

3. According to the averages of promotion in the British Army the colonels of 1854 will probably not have been absorbed in the rank of major general till the year 1868.

4. The supersession of the colonels belonging to Her Majesty's British forces by the Indian local colonels cannot fail to go on at an accelerated ratio for the following reasons, viz., that the number of colonels on the British lists is immeasurably greater than that in the local Indian lists, in proportion to the number of general officers respectively borne on the two establishments. Thus the number of generals of the different degrees is 272, in the British service; the number of colonels, by June Army List, is 394; the number of generals on the local list is 208; the number of colonels, by the last Bengal Army List, is 123.

5. It

* Appointed Major General with temporary rank, February 1865.

† Colonel T. Williams has been superseded by all major generals on the Indian list between Sir W. Coghlan and Major General J. E. Landers, viz.: 13, including Major Generals Showers, C.B., McLeod, and Troup, C.B., commanding divisions.

Colonel Rainier, 98th, by all below Major General Lang, viz., 17, including the above-mentioned officers commanding divisions.

Colonel Holdich, 20th, by all below Major General Showers, viz., 16, including Major Generals McLeod and Troup, commanding divisions.

Colonel Errington, 51st, by all below Major General Welchman, viz. 12.

Colonel Christie, 80th, by all below Major General Welchman, viz. 12.

Colonel E. Haythorne, Adjutant General, by all below Major General Landers, viz., 6.

5. It has always been believed that the inequality to which attention has been invited, was in former times forbidden, under the orders of his late Majesty King William IV.

6. For some years the practice obtained of promoting all officers to the local rank of Major General in India, who were immediately senior to officers of the Indian service, who had been promoted by the Queen's brevet.

7. In 1854 a new system of promotion was established, the old general brevet being abolished. After some correspondence it was ruled by the late Lord Hardinge, when Commanding in Chief in England, that, as a consequence of the new system of promotion, the practice above alluded to, known under the name of Fane promotion of major generals, should no longer be permitted to exist.

8. Appeals against supersession have from time to time been made by colonels of the British service serving in India, which have been set aside under the ruling above quoted.

9. The question might therefore be allowed to rest, but for the fact that lately the Right Honourable the Secretary of State for India has, with regard to all other ranks, declared the very principle on the assertion of which the quondam promotion of Fane major generals rested; and, secondly the frequent supersession of British colonels which is now proceeding.

10. Thus it is now seen (*vide* Secretary of State's Despatch, D/ 17th June 1864) that lieutenant colonels, majors, captains, and lieutenants, are promoted in the local gazettes in India, to put them on a par in India with officers who obtained rank under the Staff Corps Warrant.

11. This having thus been practically asserted, with officers of inferior degree, the inquiry is now made by the old colonels serving in India, whether the like principle should not also be applied in the case of line colonels who have been superseded by major generals of the Indian service.

12. The argument against this is, that the Indian service is not the only one which presents a separate list of promotion, entailing such effects. Thus it is maintained that the Royal Artillery and Royal Marines being on separate lists, occasional supersession of the infantry and cavalry colonels takes place with regard to those branches of the service, and *vice versâ*.

13. It is then argued that, if it be not objected to in those cases, there can be no reason for making an attempt to set aside the inequality in the case of the Indian officers.

14. In the first place, it may be observed, in answer to this argument, that it was always understood in the army at large that it had been distinctly stipulated, when the rank of general was granted to the Indian officers, that the concession should not in any manner prejudice the condition of officers of like standing belonging to the Royal army.

15. But, secondly, there is a further reason; the analogy suggested by the Royal Artillery and Royal Marine services does not stand the test of examination. The officers of those branches of the service do not generally come into contact with cavalry and infantry officers.

16. Out of India, the ordinary divisional and brigade commands do not fall to them, whether in war or in time of peace.

17. In India, on the other hand, the Indian major generals, who are now superseding the colonels of the British army in considerable numbers, will most assuredly take command of the latter as generals of divisions in the several Indian Presidencies, the very result being thus produced, against which, as we know, it was deemed formerly necessary to guard.

18. With respect, then, to the principle adopted for other ranks, I would venture to intimate, for the general consideration of His Royal Highness, that no good reason can be assigned for making exception with regard to the particular rank of major general.

19. It

19. It has appeared to me, therefore, the subject would seem to me to be one which may be, with propriety, referred for the consideration of His Royal Highness and of the Right Honourable the Secretaries of State for India and War, with a view to the application of the old rule, by which the local rank of major general is given to officers having the rank of colonel, who are superseded by the promotion of officers of the local armies of Bengal, Madras, and Bombay.

20. Supposing the old rule to be re-established, as above suggested, it would appear necessary, with regard to the Indian service, on the other hand, that if that were to occur, which is apparently impossible from the constitution of the lists of the several armies—viz., the case of a line colonel being promoted in the ordinary course to the rank of major general, who might be junior to an Indian colonel, the latter should be promoted locally in India to the rank of major general, in order to preserve perfect uniformity and equality between the two services.

21. It is to be remarked that the rank of major general being conferred on Indian officers, not only for India, but for all the world, by the late changes, the state of things to which notice has been attracted, is even more serious for the officers of the British army than was originally contemplated when the remedy above alluded to was applied.

22. It may perhaps be assumed that, in practice generally, the two sets of officers would not come into contact, except in India.

23. The experience of the war of 1855-56 does, however, lead us to believe that in any development of the military resources of Great Britain for European war, this contingency would in all probability take place.

24. The argument contained in this letter would be hardly complete were I to omit to draw the attention of His Royal Highness to another general result of the constitution of the lists of Indian field officers.

25. Thus, owing to the number of colonels, lieutenant colonels, and majors being proportionately less to the general officers as compared with the like ranks in the British Army List, an officer in the former, having been promoted to the rank of field officer, runs through the several ranks more rapidly than an officer in the British service till the rank of general is reached.

26. Officers who became brevet majors in 1858 are now lieutenant colonels in ordinary succession in the Indian lists.

27. According to the last Royal Annual Army List, it is apparent that there are great numbers of majors of 1855.

I have, &c.
(signed) *W. R. Mansfield*, General,
Commander in Chief in India.

P.S.—I would more especially invite your attention to the very important correspondence which took place on the matter of this letter during the command in chief of the late Lord Hill. The letter, which more particularly lays down principles and rules, is that from his Lordship to the President of the Board of Control, dated March 25th, 1834, in which the relative position of the King's officers and those of the late Honourable East India Company is discussed in the most masterly manner; subsequent to the writing of that letter, took place the correspondence between the late Sir Henry Fane and the Government of India, which resulted in the conferring of the local rank of major general on such officers of the King's service as had been superseded by those of the Honourable Company. I gather that copies of that correspondence must be in existence in your office, and I therefore abstain from sending copies, unless you should wish me to do so.

(signed) *W. R. Mansfield.*

— No. 2. —

(Private.)

EXTRACT from LETTER of Colonel *R. De Salis*, dated London, 28 January 1869.

Dear General Forster,

YOU asked me to write to you privately on the subject of the supersession of Queen's officers by those of the Royal Indian army.

1. My personal grievance is, that I served in the mutiny war, and that 38 of the Indian officers who were then junior to me, and some of them actually under my command, are now promoted over me to be generals. (I give you a list.)

2. The colonels of 1863, in the Indian army, are now becoming generals, but in the Queen's army, the colonels of 1855, a difference of *eight years*.

3. The last Indian general promoted is Major General Galwey, who was a Colonel of 9th May 1863. In our own service, Colonel Thesiger (30th April 1863) was his senior, and I find in the monthly Army List, from Colonel Prince Edward of Saxe Weimar down to Colonel Thesiger, there are the names of 264 *colonels* who, like myself, have been superseded.

4. If we in this country feel the anomaly, it is much more obvious in India, where our officers actually in command of troops have to give way to juniors, and between the brigadier generals of the Royal Indian army and the Queen's, there is an average difference of about four years' rank as colonel.

Thus, in the artillery, a colonel who had belonged to the Company's service would receive a brigade some three or four years before another artillery colonel, and thus might actually command a senior officer of *his own corps*. Brigadier General Stock commands at Bombay, and is junior (as colonel of 1866) to both the lieutenant colonel and major of 1st battalion, 23rd regiment, which is stationed at Bombay under his command. Similarly at Mhow, Colonel Raines, 95th, as colonel, was senior to Major General Sir G. Malcolm, who commands the Mhow Division.

5. It is difficult to understand the Royal Warrant when it refers to the amalgamation in the Army Lists of 1861, 1862, 1863, and 1864. There appeared a list of *amalgamated colonels* which suddenly disappeared!!! There is now a *fresh* amalgamated list, commencing in 1866. Perhaps the promotions to the rank of general in the Indian army might be temporarily suspended until inquiry would be made.

— No. 3. —

Colonel *H. Greathed* to the Military Secretary.

Sir, United Service Club, 3 March 1869.

I HAVE the honour to request that you will be pleased to submit to His Royal Highness the Field Marshal Commanding in Chief, my most respectful appeal on the subject of the supersession of the colonels on the British list by those on the Indian list of Her Majesty's forces.

The Royal Warrant, 1st January 1862, provided for the promotion of both British and Indian Colonels in a manner which, looking at results, would have been fairly satisfactory to the officers of both services, and, apart from the accidents of service, would have been fairly equal in the distribution of promotion in both lists.

But, by the adoption of the Royal Warrant of 1864, the promotion of the colonels on the Indian list to the rank of major general, as compared with that of the colonels on the British list, is so excessive, that nothing but a suspension of the Warrant, as regards these ranks, until further inquiry, can mitigate the damage which has been done, not only to the colonels, but to every class of *field officer, at least*, on the British list. The last officer on the Indian list promoted

moted to the rank of major general, is a colonel of 1863, who thereby supersedes a colonel of 1855 on the British list.

The fears that were felt by officers of the Indian service of stagnation in promotion, have been so utterly falsified in the event, that I respectfully submit a strong case exists for the re-adjustment of rank, in which the fair equality of promotion intended by the framers of the Warrant of 1862 may be carried out.

As all officers in Her Majesty's service are now eligible for employment in all parts of the dominions of the Queen, *all* must have an equal interest in fair and equal promotion, this supersession may at any time become a very practical grievance, full of evil to the public service. It would not become me to do more than indicate this view of the question.

I have, &c.
(signed) *Edwd. H. Greathed,*
Colonel.

— No. 4. —

Colonel *H. J. Warre* to the Military Secretary.

44, Cadogan-place, London, S. W.,
3 March 1869.

Sir,

As the operations of the Royal Warrant for the amalgamation of the Indian with the Royal army are acting very prejudicially to colonels, and, indeed, to all officers of the Queen's Service, I take the liberty of drawing the attention of His Royal Highness the Field Marshal Commanding in Chief, to the large number of colonels of the former Indian army who are now obtaining the rank of major general, under the War Office Circular (No. 867) of the 15th June 1864.

Having served in India in command of the 57th Regiment, as brigadier in command at Mhow, and as acting military secretary to the general then commanding in chief (Lord Strathnairn), I had every opportunity of learning the provisions of the Royal Warrant, and was satisfied that it was formed in a spirit of justice to both armies; but I was not aware that its provisions had been altered, until my attention was recently called to the interpretation put upon the warrant by the circular above alluded to.

The officers of the late Indian army not only derive all the benefit of their rank in England, and in all Her Majesty's Possessions, instead of, as formerly, *only* in India; but the increased inducements offered to officers in pensions, &c., on retirement, have reduced the list of senior officers so rapidly that it is now 12 months since the separate list of Indian colonels was exhausted; and officers of rank far junior to those in the Queen's Service, have been promoted to the rank of major general, so that, if I am correctly informed, whereas colonels of the year 1855 are still unpromoted in the Queen's army, colonels of 1863 are now being promoted in the Madras service.

If such is the case, and I have every reason to believe that it is so, I feel sure that His Royal Highness will endeavour to correct the evil, and will pardon my trespassing upon his valuable time to support my own claims and those of my brother officers of Her Majesty's Royal Army.

I have, &c.
(signed) *H. J. Warre,* Colonel, Half-Pay,
late 57th Regiment.

— No. 5. —

Colonel *R. Wardlaw* to the Military Secretary.

United Service Club, London,
6 March 1869.

Sir,

I BEG leave respectfully to bring under the notice of His Royal Highness the Field Marshal Commanding in Chief, the great injustice under which the colonels of Her Majesty's army are suffering by being superseded by officers of the old East Indian Establishment, under the Amalgamation Warrant, and I venture to hope that His Royal Highness will give us his able assistance towards a remedy.

I have, &c.
(signed *R. Wardlaw*, Colonel, Half-Pay.

— No. 6. —

Major General *H. P. de Bathe* to the Military Secretary.

Sir, United Service Club, 8 March 1869.

I HAVE the honour to request that you will receive this my most respectful remonstrance against the present supersession of Her Majesty's officers by those of the late India Company's *officers.**

* *Sic* in orig.

I understand that by the altered Warrant of 1864, in one year or so the Indian generals will be placed on the same list as Her Majesty's present general officers, when I should find numbers of officers junior to myself at the time of the amalgamation, taking rank and command over me.

I trust, therefore, that His Royal Highness the Commander in Chief will be pleased to take such steps as may lead to the restoration of the former Amalgamation Warrant of 1862.

I have, &c.
(signed) *H. P. de Bathe*, Major General,
Late Scots Fusilier Guards.

— No. 7. —

Colonel *C. C. Shute* to the Military Secretary.

Sir, Brighton, 11 March 1869.

I HAVE the honour to state how much I feel the supersession by the colonels of the Indian army over those on the English list, consequent on the effect of the Warrant of June 1864.

This has been such a general subject of disappointment of late by the junior major generals and senior colonels of our army, that it is unnecessary for me to trouble you with details, and I would only respectfully express a hope that His Royal Highness the Field Marshal Commanding in Chief will be so kind as to exert his influence to have this grievous wrong remedied.

I have, &c.
(signed) *C. C. Shute*, Colonel,
Commanding 4th Dragoon Guards.

— No. 8. —

Colonel *Percy Hill* to the Military Secretary.

Sir, United Service Club, 24 March 1869.

HAVING understood that it is the intention of Her Majesty's Government to inquire into the causes of the supersession of colonels of the Royal army by the promotion to major general of very junior officers of the Indian service, I venture to place my individual case before His Royal Highness as one which affords a fair criterion of the manner in which those situated like myself are affected.

I am a colonel of 1857, and towards the end of the year 1866 I found myself passed over in rank for the first time. Since that date a very large number of Indian service colonels have obtained promotion, and thereby superseded me in a mode which I believe I am correct in stating was never contemplated by the Amalgamation Warrant.

In last night's "Gazette" a further promotion has appeared, and there is now a vacancy which, if filled, will promote an officer over the heads of myself and 283 other colonels of the Royal army.

Less than two years since, some of those who have superseded me were doing duty under my command.

Under these circumstances, I humbly submit that my petition is not more than is reasonable, in asking that further promotions may be stayed until due inquiry has been made, and that upon my own promotion to major general my rank may be antedated to such period as will reinstate me in the same relative position which I should have held had the original provisions of the Amalgamation Warrant been carried out.

I have, &c.
(signed) *Percy Hill*, Colonel, Half-Pay,
Rifle Brigade.

— No. 9. —

Colonel *Robert Bruce* to the Military Secretary.

Sir, Durdham Down, Bristol, 10 April 1869.

I HAVE the honour to request you will be so good as to submit to His Royal Highness the Field Marshal Commanding in Chief my appeal against the injustice of being superseded by colonels of the Indian army far junior to me.

I have, &c.
(signed) *Robert Bruce*, Colonel, Half-Pay,
2nd Foot.

— No. 10. —

Colonel *G. V. Maxwell* to the Military Secretary.

Army and Navy Club, London,
Sir, 17 April 1869.

ON my return to England within the last few days, after 11½ years' service in India, I have been informed that the constant supersession of colonels of the Royal by those of the Indian Army, has been brought to the notice of His Royal Highness the Commander in Chief.

Although smarting under the new system, and deeply feeling the mortification which every soldier feels at having his junior going over his head, a feeling of submission to orders has hitherto prevented me from venturing to express

that mortification; but as the subject has been mooted, I most respectfully beg to represent how I have been situated.

I have just had a five-year brigade command, and during that time was often in command of either the Lahore or Peshawar Division.

At the expiration of my command, I was the senior Brigadier General in the Bengal Presidency, and on returning to my regiment to prevent my having to serve under an officer of the Indian Army, who was five years my junior as a colonel, I was obliged to go on leave of absence, although I was in good health, and fit for any active service. Had I remained in India a few weeks more, I should have had an officer (of the Indian Army) promoted over me as major general, who was not a captain until more than two years after I had obtained my present rank of colonel.

I have, &c.
(signed) *G. V. Maxwell,*
Lieut. Col. 88th Foot,
and Colonel.

ARMY (SUPERCESSION OF OFFICERS).

COPY of CORRESPONDENCE from OFFICERS of the QUEEN'S ARMY, complaining of their SUPERCESSION by JUNIOR OFFICERS of the INDIAN ARMY, promoted under a recent Warrant.

(*Colonel North.*)

Ordered, by The House of Commons, *to be Printed,* 10 *May* 1869.

BOMBAY BRANCH
OF THE
Royal Asiatic Society.
CLASS

ARMY (CONTROL DEPARTMENT).

RETURN to an Address of the Honourable The House of Commons, dated 13 June 1870;—*for*,

"RETURN, in Detail, of the SAVINGS effected by the CONTROL DEPARTMENT since its Establishment in the WAR OFFICE; detailing, also, the Cost of the Control Department since its Organisation."

War Office,
1 August 1870.

EDWARD CARDWELL.

(*Colonel Sykes.*)

Ordered, by The House of Commons, *to be Printed,*
2 *August* 1870.

BOMBAY BRANCH
OF THE
Royal Asiatic Society.
CLASS

409.

NOTE.—This Return shows merely the cost of the Departments comprised under the present Control Department in certain years before the establishment of that Department, inasmuch as the variations which have occurred during that period in the Total Force, the Force employed in the Colonies, the Reserves of Stores maintained, and other causes, would render any exact comparison of expenditure illusory.

— No. 1. —

RETURN showing the Results of the annexed STATEMENTS in Aggregate Amounts, in order that the Surpluses and Deficiencies on the Sums voted may be Exhibited, as far as practicable. The Results of the Years 1866-67 and 1867-68 are also given for the purpose of comparison.

YEAR.	Charges prior to the introduction of the Control Department.		Charges wholly or partially under the Supervision of the Control Department.		Surplus.	Deficiency.
	Estimate.	Expenditure.	Estimate.	Expenditure.		
	£.	£.	£.	£.	£.	£.
1866-67	3,734,193	3,957,216	-	-	-	223,023
1867-68	4,074,806	4,020,263	-	-	54,543	—
1868-69	-	-	4,124,594	3,742,517	382,077	—
1869-70	-	-	3,355,779	2,891,640	464,139	—
£.	7,808,999	7,977,479	7,480,373	6,634,157	900,759	223,023
1870-71	-	-	2,822,767	—	—	—

— No. 2. —

COST of the CONTROL DEPARTMENT since its Organisation in 1868-69, together with the EXPENDITURE for Services of a like Character in 1866-67 and 1867-68, as well as the Number of Men Voted in the Estimates.

	1866-67.		1867-68.		1868-69.		1869-70.		1870-71.		
	Estimate.	Expenditure.	Estimate.	Expenditure.	Estimate.	Expenditure.	Estimate.	Expenditure.	Vote.	Estimate.	Expenditure.
Establishments for the Regular Army serving at Home	91,554	-	91,126	-	87,505	-	90,677	-	-	89,051	—
In the Colonies	45,641	-	46,119	-	50,025	-	36,612	-	-	25,930	—
TOTAL £.	137,195	-	137,245	-	137,530	-	127,289	-	-	114,981	—
	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.		£.	£. s. d.
Vote 18.—War Office, Control Branch	18,348	18,371 11 3	18,817	19,715 - 6	23,301	22,774 7 6	18,127	17,373 7 6	16	16,837	—
Vote 2.—Commissariat Staff	90,882	91,681 6 2	94,025	91,485 16 3	93,167	89,219 13 -	82,068	83,711 10 -	9	77,973	—
Wages	15,536	16,974 14 11	15,626	15,329 7 4	14,910	13,415 - 5	13,335	14,012 10 5	9	20,073	—
Vote 4.—Barrack Staff	39,644	41,794 9 9	42,209	42,462 3 11	43,546	42,309 12 11	39,969	34,756 16 8	9	26,340	—
	901	901 - -	938	938 - -	990	990 - -					
Wages	9,887	10,292 2 -	12,025	12,395 15 2	13,867	14,070 1 -	13,095	12,452 17 2	9	11,815	—
Vote 7.—Purveying Staff	23,295	23,726 17 1	22,224	23,167 9 5	22,361	21,916 5 7	17,720	18,722 17 5	9	18,522	—
	848	848 - -	850	850 - -	848	848 - -					
Wages	3,976	4,631 3 -	7,686	4,397 7 8	7,897	9,163 19 2	7,727	7,923 4 6	9	4,967	—
Votes 12 and 13.—Staff Wages and Contingencies	721,771	811,778 19 1	903,145	849,211 4 2	776,918	733,004 2 5	567,383	545,215 8 2	9 & 12	480,091	—
TOTAL SUPPLY SERVICES	906,740	1,002,628 12 -	1,098,728	1,040,237 3 11	974,504	924,936 14 6	741,297	716,795 4 4	-	639,781	—
GRAND TOTAL £.	925,088	1,021,000 3 3	1,117,545	1,059,952 4 5	997,805	947,711 2 -	759,424	734,168 11 10	-	656,618	—

	Estimate.	Expenditure.	Estimate.	Expenditure.	
Total 1866-67 and 1867-68	£. 2,042,633	£. 2,080,952 7 s. 8 d.	Total 1868-69 and 1869-70 £. 1,757,229	£. 1,681,879 13 s. 10 d.	Estimate 1870-71 £. 656,618

War Office, July 1870.

H. W. S. Whiffin, Accountant General.

EXPLANATORY PAPER.

ABSTRACT of the EXPENDITURE, Estimated and Actual, included in the STATEMENTS hereto annexed, showing the COMPARATIVE EXPENDITURE in 1866-7 and 1867-8, as compared with the EXPENDITURE under CONTROL DEPARTMENT.

	Statement.	1866-7.						*1867-8.						1868-9.						1869-70.						1870-71.
		Estimate.	Expenditure.					Estimate.	Expenditure.					Estimate.	Expenditure.					Estimate.	Expenditure.					Estimate.
		£.	£.	s.	d.			£.	£.	s.	d.			£.	£.	s.	d.			£.	£.	s.	d.			£.
War Office Establishment - - -	(A.) Page 5.	18,348	18,371	11	6			18,817	19,715	-	6			23,301	22,774	7	6			18,127	17,373	7	6			16,837
Commissariat - - - - - -	(B.) Page 6.	1,147,832	1,245,428	11	5			1,302,788	1,206,546	2	1			1,308,822	1,237,328	11	7			1,192,468	1,025,536	16	-			1,034,635
Barrack - - - - - - -	(C.) Page 7.	531,082	556,542	6	8			560,977	605,576	6	-			591,140	562,520	8	10			512,867	459,090	16	2			413,601
Purveyors - - - - - -	(D.) Page 8.	116,369	123,074	3	8			115,866	128,679	4	5			118,592	124,905	9	1			108,743	95,994	12	5			95,026
Military Store and Manufacturing Department - - - - - -	(E.) Page 9. 7 Appendices.	*1,780,392	1,866,062	8	4			1,925,188	1,898,953	17	10			1,914,653	1,620,580	-	-			1,360,557	1,139,897	8	-			1,119,744
Miscellaneous Services - - -	(F.) Page 24.	46,369	55,093	8	1			52,883	59,462	17	10			59,366	65,867	6	10			53,782	57,205	17	9			51,574
Departmental Corps - - - -	(G.) Page 24.	93,801	92,643	7	5			98,287	101,329	17	9			108,720	108,541	4	10			109,235	96,541	8	1			91,350
TOTAL - - -	- -	3,734,193	3,957,215	17	1			4,074,806	4,020,263	6	5			4,124,594	3,742,517	8	8			3,355,779	2,891,640	5	11			2,822,767

* The above Amounts, particularly those representing Expenditure, include the value of Stores manufactured or issued for Service of the other Departments of State, the Indian and Colonial Governments, Colonial Corps, &c., &c., on Repayment, viz.:

Value of Stores issued on Repayment -	- -	- -	156,611	14	5			193,938	246,011	10	8			133,000	216,521	2	6			104,989	257,357	13	6			50,000

EXPLANATORY PAPERS referring to the Foregoing ABSTRACT.

STATEMENT (A.)

WAR OFFICE ESTABLISHMENT.		1866-7.		1867-8.		1868-9.		1869-70.		1870-71.
		Estimate.	Expenditure.	Estimate.	Expenditure.	Estimate.	Expenditure.	Estimate.	Expenditure	Estimate.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Controller in Chief - - -	Major Gen. Rt. Hon. Sir H. K. Storks	- -	- -	- -	500 - -	2,000 - -	2,000 - -	2,000 - -	2,000 - -	2,000 - -
	Major General Sir G. Balfour -	- -	- -	- -	243 - -	1,000 - -	1,000 - -	1,000 - -	1,000 - -	1,000 - -
Private Secretary to Sir. H. K. Storks - - - -	George Lawson - - -	- -	- -	- -	95 - -	422 10 -	422 10 -	472 10 -	472 10 -	487 10 -
Private Secretary to Sir G. Balfour	S. McCaul - - - -	- -	- -	- -	41 - -	185 - -	180 - -	200 - -	195 - -	215 - -
SUPPLY AND TRANSPORT.										
Commissary General in Chief -	Sir W. J. T. Power - - -	- -	- -	- -	- -	-	- -	- -	- -	1,502 - -
1st Class Clerk (1st section) -	F. Crafer - - - -	790 - -	790 - -	800 - -	800 - -	800 - -	800 - -	800 - -	800 - -	800 - -
2nd Class Clerk - - - -	H. B. Jackson - - - -	465 - -	465 - -	480 - -	480 - -	495 - -	498 - -	500 - -	500 - -	500 - -
2nd Class Clerk - - - -	H. D. Fellowes - - -	- -	- -	- -	- -	- -	- -	- -	- -	410 - -
STORE BRANCH.										
	Rear Admiral Sir J. C. Caffin -	1,200 - -	1,200 - -	1,200 - -	1,200 - -	1,200 - -	976 - -	—	—	—
1st Class Clerk (1st section) -	D. Harrison - - - -	670 - -	675 - -	690 - -	695 - -	710 - -	715 - -	730 - -	735 - -	—
1st Class Clerk (2nd section) -	T. D. Cater - - - -	640 - -	638 - -	650 - -	650 - -	650 - -	650 - -	650 - -	650 - -	650 - -
1st Class Clerk (2nd section) -	H. Baker - - - -	600 - -	600 - -	620 - -	600 - -	640 - -	640 - -	650 - -	180 - -	—
2nd Class Clerks - - -	S. H. Payne - - - -	520 - -	510 - -	540 - -	538 - -	560 - -	558 - -	580 - -	578 - -	600 - -
	S. Wickins - - - -	465 - -	465 - -	480 - -	480 - -	495 - -	495 - -	500 - -	500 - -	500 - -
	W. I. F. Brand - - -	405 - -	410 - -	420 - -	425 - -	435 - -	440 - -	450 - -	455 - -	465 - -
	E. C. Nepean - - - -	405 - -	400 - -	420 - -	415 - -	435 - -	430 - -	450 - -	445 - -	465 - -
	G. S. Mould - - - -	390 - -	388 - -	405 - -	402 - -	420 - -	417 - -	435 - -	432 - -	450 - -
	A. J. Hare - - - -	330 - -	327 - -	345 - -	342 - -	360 - -	357 - -	—	—	—
	J. P. M. Pierce - - -	330 - -	327 - -	345 - -	342 - -	360 - -	357 - -	375 - -	372 - -	390 - -
	O. C. Fitz-Roy - - -	330 - -	327 - -	345 - -	342 - -	360 - -	357 - -	375 - -	372 - -	—

3rd Class Clerks	P. C. B. Lennard	220 – –	222 – –	235 – –	237 – –	250 – –	252 – –	264 – –	267 – –	—
	M. Angelo	200 – –	202 – –	215 – –	217 – –	230 – –	232 – –	245 – –	247 – –	260 – –
	A. C. Cleveland	200 – –	202 – –	215 – –	217 – –	230 – –	232 – –	—	—	—
	H. J. Smith	200 – –	202 – –	215 – –	217 – –	230 – –	232 – –	245 – –	247 – –	260 – –
	E. M. Miller	200 – –	202 – –	215 – –	217 – –	230 – –	232 – –	245 – –	247 – –	260 – –
	J. H. Tucker	200 – –	202 – –	215 – –	217 – –	230 – –	232 – –	245 – –	247 – –	260 – –
	E. Vallack	200 – –	202 – –	215 – –	217 – –	230 – –	232 – –	245 – –	247 – –	260 – –
	J. B. H. Steward	200 – –	202 – –	215 – –	217 – –	230 – –	232 – –	245 – –	247 – –	—
	C. E. H. Jay	200 – –	202 – –	215 – –	217 – –	230 – –	232 – –	245 – –	247 – –	260 – –
	A. E. M. Uniacke	180 – –	182 – –	195 – –	197 – –	210 – –	212 – –	—	—	—
	D. Swain	270 – –	272 – –	285 – –	287 – –	300 – –	300 – –	—	—	—
	O. H. Morshead	170 – –	166 – –	185 – –	181 – –	—	—	—	—	—
	S. C. Rochat	160 – –	160 – –	170 – –	170 – –	185 – –	185 – –	200 – –	200 – –	215 – –
	H. Higgins	160 – –	155 – –	170 – –	165 – –	185 – –	179 – –	200 – –	194 – –	215 – –
	F. Carew	160 – –	155 – –	170 – –	165 – –	185 – –	180 – –	200 – –	195 – –	—
Military Store Clerks	J. Acres	82 2 6	82 2 6	100 7 6	117 – 6	118 12 6	118 12 6	118 12 6	118 12 6	118 12 6
	G. Martin	63 17 6	63 17 6	68 13 6	73 – –	82 2 6	73 – –	82 2 6	82 2 6	93 18 –
	J. F. Crawford	63 17 6	73 – –	68 13 6	73 – –	91 5 –	91 5 –	91 5 –	91 5 –	91 5 –
	H. Johnson	63 17 6	70 1 6	68 13 6	73 – –	82 2 6	73 – –	82 2 6	82 2 6	93 18 –
	D. Connolly	- -	- -	- -	- -	- -	- -	91 5 –	91 5 –	91 5 –
	T. C. Tabor	- -	- -	- -	- -	- -	- -	63 17 6	63 17 6	63 17 6
	R. Hawkins	- -	- -	- -	- -	- -	- -	63 17 6	63 17 6	63 17 6
	T. H. Boykett	- -	- -	- -	- -	- -	- -	63 17 6	63 17 6	63 17 6
	T. McGoveny	- -	- -	- -	- -	- -	- -	63 17 6	63 17 6	63 17 6
Ordnance Branch.										
Director of Ordnance	General J. St. George	1,000 – –	1,000 – –	1,000 – –	1,000 – –	1,000 – –	750 – –	—	—	—
Assistant Director of Ordnance	Colonel T. W. Milward	400 – –	400 – –	400 – –	400 – –	400 – –	475 – –	700 – –	700 – –	—
Deputy Assistant Director of Ordnance	General J. H. Lefroy	- -	- -	- -	- -	- -	250 – –	1,200 – –	1,200 – –	—
Director of Artillery and Stores	General Adye	- -	- -	- -	- -	- -	- -	- -	- -	1,000 – –
Secretary	Captain Harrison	- -	- -	- -	- -	- -	- -	- -	- -	300 – –
1st Class Clerk (2nd section)	H. A. Greene	650 – –	646 – –	650 – –	650 – –	650 – –	538 – –	—	—	—
2nd Class Clerk	J. W. Engelbach	330 – –	326 – –	345 – –	341 – –	360 – –	356 – –	375 – –	371 – –	390 – –
3rd Class Clerks	F. W. Young	300 – –	300 – –	300 – –	300 – –	300 – –	300 – –	300 – –	300 – –	300 – –
	E. C. Corballis	200 – –	172 – –	—	—	—	—	—	—	—
	A. C. Cleveland	- -	- -	- -	- -	230 – –	20 – –	245 – –	75 – –	—
	G. W. Lewis	140 – –	136 – –	150 – –	146 – –	160 – –	129 – –	—	—	—
	P. Dalyell	- -	- -	- -	- -	- -	- -	210 – –	105 – –	—
	G. K. Hunter	- -	58 10 –	118 – –	118 – –	118 – –	118 – –	118 – –	118 – –	118 – –
	W. McCanlis	- -	- -	- -	18 – –	118 – –	118 – –	118 – –	118 – –	118 – –
Ordnance Select Committee		4,594 – –	4,594 – –	4,678 – –	4,678 – –	4,908 – –	4,908 – –	1,394 – –	1,394 – –	1,442 – –
Total (carried to Explanatory Paper, page 3)	£.	18,347 15 –	18,371 11 6	18,817 8 –	19,715 – 6	23,300 12 6	22,774 7 6	18,127 7 6	17,373 7 6	16,836 18 6

STATEMENT (B.)

COMMISSARIAT.	1866-7.		1867-8.		1868-9.		1869-70.		1870-71.
	Estimate.	Expenditure.	Estimate.	Expenditure.	Estimate.	Expenditure.	Estimate.	Expenditure.	Estimate.
	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.	£.
Pay of officers and subordinates, servants' allowance, contingencies, and travelling expenses - - - - - - -	90,882	91,681 6 1	94,025	91,485 16 3	93,167	89,219 13 -	82,068	83,711 10 -	77,973
WAGES.									
Working pay, Commissariat Staff Corps, and pay of civil artificers, labourers, and others	15,536	16,974 14 11	15,626	15,329 7 4	14,910	13,415 - 5	13,335	12,012 10 5	20,073
Incidental expenses connected with abattoirs and bakeries - - - - - - -	1,200	1,398 4 2	1,141	2,317 5 3	1,141	456 19 8	1,141	630 13 6	746
Provisions and allowances in lieu - - -	416,515	415,465 4 3	535,283	433,277 8 10	516,303	460,320 18 2	445,667	326,044 16 5	361,668
Forage - - - - - - - -	396,638	431,239 16 10	407,572	423,870 17 -	443,801	435,420 5 8	423,443	400,905 14 10	379,767
Transport abroad - - - - - - -	63,406	106,239 17 1	71,109	56,676 9 4	75,597	69,692 11 11	60,964	47,540 - 4	45,362
Transport home - - - - - - -	62,000	79,538 - 7	64,500	95,741 8 8	67,500	79,517 18 10	82,500	85,960 15 3	82,196
Colonial allowances - - - - - -	101,655	102,891 7 6	113,532	87,847 9 5	96,403	89,285 3 11	83,350	68,730 15 3	66,850
TOTAL (carried to Explanatory Paper, page 3) - - - £.	1,147,832	1,245,428 11 5	1,302,788	1,206,546 2 1	1,308,822	1,237,328 11 7	1,192,468	1,025,536 16 -	1,034,635

STATEMENT (C.)

BARRACK.	1866-7.		1867-8.		1868-9.		1869-70.		1870-71.
	Estimate.	Expenditure.	Estimate.	Expenditure.	Estimate.	Expenditure.	Estimate.	Expenditure.	Estimate.
	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.	£.
Pay of officers, subordinates, servants' allowance, contingencies, and travelling expenses - - - -	39,644	41,794 9 9	42,209	42,462 3 11	43,546	42,309 12 11	39,969	34,756 16 8	26,340
Pay of superintendent of barrack department - - -	901	901 – –	938	938 – –	990	990 – –			
Wages of labourers, &c. - - - - - - -	9,887	10,292 2 –	12,025	12,395 15 2	13,867	14,070 1 –	13,095	12,452 17 2	11,815
Washing and repairing bedding, and purchase of paillasse straw - - - - - - - - - - -	41,543	43,177 11 2	41,246	44,567 19 6	42,688	43,953 18 10	38,569	37,018 11 –	33,361
Miscellaneous Services, viz.:—									
Emptying cesspools, sweeping chimneys, lime and contingent expenses - - - - - - - -	22,260	25,380 14 7	23,778	25,797 1 7	27,656	26,402 5 1	24,087	23,090 – 3	17,076
Fuel and light - - - - - - - - -	248,834	243,512 10 11	256,464	284,748 8 7	270,951	241,072 15 4	234,272	201,289 7 9	205,479
Lodging allowance - - - - - - - -	89,159	92,364 7 –	91,517	92,050 8 8	92,942	88,845 7 5	87,375	79,244 2 8	61,250
Rents, water supply, &c. - - - - - - -	78,854	99,119 11 3	92,800	102,616 8 7	98,500	104,876 8 3	75,500	71,239 – 8	58,280
TOTAL (carried to Explanatory Paper, page 3) - - - - - - £.	531,082	556,542 6 8	560,977	605,576 6 –	591,140	562,520 8 10	512,867	459,090 16 2	413,601

STATEMENT (D.)

PURVEYORS.	1866-7.		1867-8.		1868-9.		1869-70.		1870-71.
	Estimate.	Expenditure.	Estimate.	Expenditure.	Estimate.	Expenditure.	Estimate.	Expenditure.	Estimate.
	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.	£.
Pay of officers, subordinates, servants' allowance, contingencies, and travelling expenses	23,295	23,726 17 1	22,224	23,167 9 5	22,361	21,916 5 7	17,720	18,722 17 5	18,522
Pay of Purveyor in Chief	848	848 – –	850	850 – –	848	848 – –			
Wages, orderlies, nurses, and laundries	3,976	4,631 3 –	7,686	4,397 7 8	7,897	9,163 19 2	7,727	7,923 4 6	4,967
Hospital Diets (net cost)	46,960	49,721 – 1	52,045	54,417 2 9	52,476	51,827 12 1	49,500	40,531 5 7	43,069
Washing and repairing bedding and clothing	12,953	14,914 17 9	7,533	14,980 10 –	7,979	9,161 14 10	6,796	7,413 16 11	7,393
Rents and supply of water	4,373	4,686 18 8	2,709	3,033 3 –	2,716	2,997 – –	2,500	1,870 15 9	1,126
Fuel and light	19,882	20,067 8 2	18,708	22,781 9 9	19,352	23,505 1 1	19,500	15,026 3 10	15,759
Miscellaneous services	4,082	4,477 18 11	4,111	5,052 1 10	4,963	5,485 16 4	5,000	4,506 8 5	4,190
TOTAL (carried to Explanatory Paper, page 3) £.	116,369	123,074 3 8	115,866	128,679 4 5	118,592	124,905 9 1	108,743	95,994 12 5	95,026

STATEMENT (E.)

ABSTRACT of the Estimated, of the Actual, Approximate and Probable EXPENDITURE of the MANUFACTURING and STORE DEPARTMENTS.

	1866–7.		1867–8.		1868–9.		1869–70.		1870–71.	
	Estimate.	Actual Expenditure.	Estimate.	Actual Expenditure.	Estimate.	Actual Expenditure.	Estimate.	Actual Expenditure.	Estimate.	
	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.	£.	
Pay and Wages, Manufacturing Departments	532,519	628,886 2 6	714,968	660,539 2 4	590,576	549,475 10 3	396,385	380,022 15 3	319,695	See following Appendix, No. 1.
Pay and Wages, Store Department	189,252	182,892 16 7	188,177	188,672 1 10	186,342	183,528 12 2	170,998	165,192 12 11	160,396	" " No. 2.
GRAND TOTAL of Pay and Wages £.	721,771	811,778 19 1	903,145	849,211 4 2	776,918	733,004 2 5	567,383	545,215 8 2	480,091	" " No. 3.
Materials and Miscellaneous:										
Manufacturing Departments	642,271	633,646 – 4	619,162	590,676 19 2	519,982	406,683 9 –	286,888	232,933 14 5	230,142	" " No. 1.
Store Department	394,431	460,652 18 10	405,761	624,290 14 6	438,470	371,852 17 7	400,718	260,345 19 1	352,315	" " No. 2.
TOTAL Material and Miscellaneous £.	1,036,702	1,094,298 19 2	1,024,923	1,214,967 13 8	958,452	778,536 6 7	687,606	493,279 13 6	582,457	" " No. 3.
TOTAL of Pay, Wages, Materials, and Miscellaneous £.	1,758,473	1,906,077 18 3	1,928,068	2,064,178 17 10	1,735,370	1,511,540 9 –	1,254,989	1,038,495 1 8	1,062,548	" " No. 3.
Included in other Votes:										
For Stores	130,429	129,287 11 9	142,162	142,567 17 10	180,207	103,481 9 11	–	- -	- -	" " No. 4.
For Works	11,163	10,534 – –	33,556	20,756 – –	94,675	84,019 – –	89,246	85,884 2 9	53,356	" " No. 5.
For Police	–	- -	–	- -	11,646	12,650 – –	12,602	11,798 3 7	- -	" " No. 5.
Amount taken and expended in Engineer Vote for the Establishment of the Inspector of Works	–	- -	–	- -	3,755	3,597 18 10	3,720	3,720 – –	3,840	" " No. 5.
GRAND TOTAL £.	1,900,065	2,045,899 10 -	2,103,786	2,227,502 15 8	2,025,653	1,715,288 17 9	1,360,557	1,139,897 8 –	1,119,744	" " No. 3.
Deduct—Value of Services performed by the Manufacturing and Military Store Departments for other Army Establishments, &c.	119,673	179,837 1 8	178,598	328,548 17 10	111,000	94,708 17 9	—	—	—	
NET TOTAL (carried to Explanatory Paper, page 3) £.	1,780,392	1,866,062 8 4	1,925,188	1,898,953 17 10	1,914,653	1,620,580 – –	1,360,557	1,139,897 8 –	1,119,744	

N.B.—The above amounts, particularly those representing Expenditure, include the Value of Stores Manufactured or Issued for Service of the other Departments of State, the Indian and Colonial Governments, Colonial Corps, &c., &c., on repayment, viz.:—

Value of Stores issued on Repayment	- -	156,611 14 5	193,938	246,011 10 8	133,000	216,521 2 6	104,989	257,357 13 6	50,000	

Appendix No. 1.

MANUFACTURING DEPARTMENTS.

	1866–7.		1867–8.		1868–9.		1869–70.		1870–1.
	Estimate.	Actual Expenditure.	Estimate.	Actual Expenditure.	Estimate.	Actual Expenditure.	Estimate.	Actual Expenditure.	Estimate.
Establishments:	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.	£.
Establishments for superintendence - - - Pay - - - - - - - - - -	44,656	44,696 10 3	41,627	49,352 6 –	46,204	43,918 – 8	40,713	40,095 8 5	38,778
Establishments for instruction - - - -	2,412	2,473 19 10	- -	- - -	- -	- - -	2,751	2,414 13 –	—
Establishments for instruction, and miscellaneous establishments - - - - - - -	- -	- - -	10,333	2,539 10 3	2,944	2,511 12 11	- -	- -	2,515
Total - - £.	47,068	47,170 10 1	51,960	51,891 16 3	49,148	46,429 13 7	43,464	42,510 1 5	41,293
Miscellaneous Charges:									
Contingencies - - - - - - - -	11,833	12,749 11 9	7,470	17,523 6 10	6,141	4,636 10 4	4,401	4,993 13 1	3,969
Rents, fuel for officers, &c. - - - - - -	- -	- - -	8,632	- - -	1,670	1,010 – 8	602	290 2 –	297
Total - - £.	11,833	12,749 11 9	16,102	17,523 6 10	7,811	5,646 11 –	5,003	5,283 15 1	4,266
Wages - - - - - - - - -	395,060	416,565 18 8	646,906	591,123 19 3	533,617	497,399 5 8	347,918	332,228 18 9	274,136
Wages for small arms factories - - - -	78,558	152,400 2 –							
Total - - £.	473,618	568,966 – 8	646,906	591,123 19 3	533,617	497,399 5 8	347,918	332,228 18 9	274,136
Total Pay, Wages, &c. (carried to Statement E., page 9) - - £.	532,519	628,886 2 6	714,968	660,539 2 4	590,576	549,475 10 3	396,385	380,022 15 3	319,695
Materials:									
Timber - - - - - - - - -	11,773	481,107 3 6	15,986	463,424 4 1	21,824	24,113 9 5	7,215	8,599 16 10	3,641
Fuel - - - - - - - - -	55,625		66,732		63,539	54,827 16 10	48,096	44,485 7 3	40,400
Metals - - - - - - - - -	271,499		260,552		299,296	240,394 13 7	155,642	143,085 19 8	127,961
Saltpetre and sulphur - - - - - - -	- -	- - -	- -	- - -	- -	- - -	- -	1,689 8 9	—
Total - - £.	338,897	481,107 3 6	343,270	463,424 4 1	384,659	319,335 19 10	210,953	197,860 12 6	172,002
Manufactured and miscellaneous stores - - Materials for small arms factories - - -	77,393	35,053 7 4	127,257	- - -	88,360	66,571 9 8	64,360	24,383 12 4	39,770
Total - - £.	416,290	516,160 10 10	470,527	463,424 4 1	473,019	385,907 9 6	275,313	222,244 4 10	211,772

Machinery:									
Maintenance	- -	- - -	1,854	1,975 3 -	43,442	17,901 15 8	9,040	6,625 13 11	9,130
New	34,011	57,041 13 4	58,416	43,109 5 7					
Total £.	34,011	57,041 13 4	60,270	45,084 8 7	43,442	17,901 15 8	9,040	6,625 13 11	9,130
Buildings:									
New and additions	29,122	38,463 18 7	63,678	56,612 16 2	Vote 14: *See* below		Vote 14. *See* below.		
Maintenance	21,195	20,145 17 10	17,936	18,521 0 1					
Total £.	50,317	58,609 16 5	81,614	75,134 5 3	—	—	—	—	—
Hire of horses	- -	- - -	- -	- - -	3,521	2,874 3 10	2,535	4,063 15 8	2,500
Freight	—	—	—	—	—	—	—	—	—
Police	1,653	1,833 19 9	6,751	7,034 1 3	- -	- - -	- -	- -	6,740
Supplementary vote for conversion of small arms	140,000	—	—	—	—	—	—	—	—
TOTAL Materials and Miscellaneous (carried to Statement E., page 9) £.	642,271	633,646 - 4	619,162	590,676 19 2	519,982	406,683 9 -	286,888	232,933 14 5	230,142
Total £.	1,174,790	1,262,532 2 10	1,334,130	1,251,216 1 6	1,110,558	956,158 19 3	683,273	612,956 9 8	549,837
Store Services in other Votes:									
Buildings	- - -	(Carried to Statement No. 5, page 17)		- -	61,843	47,978 - -	33,410	30,048 2 9	18,541
Inspector of Works	- - -	ditto - -	ditto	- -	3,755	3,597 18 10	3,720	3,720 - -	3,840
Police	- - -	ditto - -	ditto	- - -	6,662	6,630 - -	9,828	9,292 9 -	—
GRAND TOTAL £.	1,174,790	1,262,532 2 10	1,334,130	1,251,216 1 6	1,182,818	1,014,364 18 1	730,231	656,017 1 5	572,218

APPENDIX No. 2.

MILITARY STORE DEPARTMENT.

	1866-7.		1867-8.		1868-9.		1869-70.		1870-1.
	Estimate.	Actual Expenditure.	Estimate.	Actual Expenditure.	Estimate.	Actual Expenditure.	Estimate.	Actual Expenditure.	Estimate.
Establishments:	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.	£.
Establishments for superintendence - - - - Pay - - - - - - - - - - -	64,158	64,649 8 11	65,563	65,216 17 6	62,734	59,637 15 8	53,432	53,429 3 6	52,302
Establishments for instruction - - - - - -	—	—	—	—	—	—	—	—	—
Establishments for instruction and miscellaneous establishments - - - - - - - - - -	—	—	—	—	—	—	—	—	—
Total - - £.	64,158	64,649 8 11	65,563	65,216 17 6	62,734	59,637 15 8	53,432	53,429 3 6	52,302
Contingencies - - - - - - - - -	700	823 12 6	494	1,511 10 9	427	2,720 1 5	1,891	2,935 - 9	558
Rents, fuel for officers, &c. - - - - - -	- -	- -	- -	- -	- -	69 - 11	—	—	—
Total - - £.	700	823 12 6	494	1,511 10 9	427	2,789 2 4	1,891	2,935 - 9	558
Wages - - - - - - - - - - -	124,394	117,419 15 2	122,120	121,943 13 7	123,181	121,101 14 2	115,675	108,828 8 8	107,536
Wages for small arms factories - - - - - -	—	—	—	—	—	—	—	—	—
Total - - £.	124,394	117,419 15 2	122,120	121,943 13 7	123,181	121,101 14 2	115,675	108,828 8 8	107,536
TOTAL Pay, Wages, &c. (carried to Statement E., page 9) - - - - - - £.	189,252	182,892 16 7	188,177	188,672 1 10	186,342	183,528 12 2	170,998	165,192 12 11	160,396
Materials:									
Timber - - - - - - - - - - -	5,300	5,251 12 4	4,400	4,443 16 8	6,500	6,234 3 -	8,000	7,234 - 5	6,000
Fuel - - - - - - - - - - -	1,130	1,061 17 9	1,400	1,115 16 11	4,220	2,727 13 4	10,000	1,733 14 7	11,400
Metals - - - - - - - - - - -	- -	- -	- -	- -	782	- -	8,000	3,294 10 6	6,000
Saltpetre and sulphur - - - - - - - - -	- -	- -	- -	- -	- -	- -	20,000	- -	10,000
Total - - £.	6,430	6,313 10 1	5,800	5,559 13 7	11,502	8,961 16 4	46,000	12,262 5 6	33,400
Manufactured and miscellaneous stores - - - - Materials for small arms factories - - - - -	235,320	403,388 11 9	371,300	579,379 8 10	405,708	333,397 5 5	330,718	228,888 7 2	292,872
Total - - £.	241,750	409,702 1 10	377,100	584,939 2 5	417,210	342,359 1 9	376,718	241,150 12 8	326,272

Machinery:									
Maintenance	- -	- -	- -	260 1 8	800	- -	2,000	150 - -	1,000
New	8,250	5,586 8 6	—	—	—	—	—	—	—
Total £.	8,250	5,586 8 6	- -	260 1 8	800	- -	2,000	150 - -	1,000
Buildings:									
New and additions / Maintenance	7,000	7,121 3 5	See below		Taken in Vote 14.	See below.		—	—
Total £.	7,000	7,121 3 5	—	—	—	—	—	—	—
Hire of horses	5,500	5,750 7 -	6,500	5,273 9 8	1,760	1,868 4 11	2,000	487 7 9	2,600
Freight	18,000	22,843 17 11	18,000	29,905 1 7	18,700	27,625 10 11	20,000	18,557 18 8	16,635
Police	8,931	9,649 - 2	4,161	3,912 19 2	- -	- -	- -	- -	5,808
Supplementary Vote for conversion of small arms	105,000	—	—	—	—	—	—	—	—
Total Materials and Miscellaneous (carried to Statement E., page 9) £.	394,431	460,652 18 10	405,761	624,290 14 6	438,470	371,852 17 7	400,718	260,345 19 1	352,315
Total £.	583,683	643,545 15 5	593,938	812,962 16 4	624,812	555,381 9 9	571,716	425,538 12 -	512,711
Store Services in other Votes:									
Buildings (carried forward to page 17)	11,163	10,534 - -	33,556	20,756 - -	—	—	—	—	—
Buildings (carried forward in two sets of amounts to page 17)	- -	- -	- -	- -	32,832	36,041 - -	55,836	55,836 - -	34,815
Police (carried forward to page 17)	- -	- -	- -	- -	4,984	6,020 - -	2,774	2,505 14 7	—
Amount taken in other Votes for stores to be supplied by Store Department (brought from page 16)	130,429	129,287 11 9	142,162	142,567 17 10	180,207	103,481 9 11	—	—	—
Grand Total £.	725,275	783,367 7 2	769,656	976,286 14 2	842,835	700,923 19 8	630,326	483,880 6 7	547,526

APPENDIX No. 3.

MANUFACTURING AND MILITARY STORE DEPARTMENTS.

	1866-7.		1867-8.		1868-9.		1869-70.		1870-1.
	Estimate.	Actual Expenditure.	Estimate.	Actual Expenditure.	Estimate.	Actual Expenditure.	Estimate.	Actual Expenditure.	Estimate.
Establishments:	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.	£.
Establishments for superintendence - - - Pay - - - - - - - - -	108,814	109,345 19 2	107,190	114,569 3 6	108,938	103,555 16 4	94,145	93,524 11 11	91,080
Establishment for instruction - - - -	2,412	2,473 19 10	- -	2,539 10 3	- -	- - -	2,751	2,414 13 -	—
Establishment for instruction, and miscellaneous establishments - - - - - - -	- -	- - -	10,333	- - -	2,944	2,511 12 11	- -	- - -	2,515
Total - - £.	111,226	111,819 19 -	117,523	117,108 13 9	111,882	106,067 9 3	96,896	95,939 4 11	93,595
Miscellaneous Charges:									
Contingencies - - - - - - -	12,533	13,573 4 3	7,964	17,523 6 10	6,568	7,356 11 9	6,292	7,928 13 10	4,527
Rents, fuel for officers, &c. - - - -	- -	- - -	8,632	1,511 10 9	1,670	1,079 1 7	602	290 2 -	297
Total - - £.	12,533	13,573 4 3	16,596	19,034 17 7	8,238	8,435 13 4	6,894	8,218 15 10	4,824
Wages - - - - - - - - -	519,454	533,985 13 10	769,026	713,067 12 10	656,798	618,500 19 10	463,593	441,057 7 5	381,672
Wages for small arms factories - - -	78,558	152,400 2 -							
Total - - £.	598,012	686,385 15 10	769,026	713,067 12 10	656,798	618,500 19 10	463,593	441,057 7 5	381,672
TOTAL Pay, Wages, &c. (carried to Statement E., page 9) - - - £.	721,771	811,778 19 1	903,145	849,211 4 2	776,918	733,004 2 5	567,333	545,215 8 2	480,091
Materials:									
Timber - - - - - - - -	17,073	487,420 13 7	20,386	468,983 17 8	28,324	30,347 12 5	15,215	15,833 17 3	9,641
Fuel - - - - - - - -	56,755		68,132		67,759	57,555 10 2	58,096	46,219 1 10	51,800
Metals - - - - - - - -	271,499		260,552		300,078	240,394 13 7	163,642	146,380 10 2	133,961
Saltpetre and sulphur - - - - - -	- -	- - -	- -	- - -	- -	- - -	20,000	1,689 8 9	10,000
Total - - £.	345,327	487,420 13 7	349,070	468,983 17 8	396,161	328,297 16 2	256,953	210,122 18 -	205,402
Manufactured and miscellaneous stores - - Materials for small arms factories - - -	312,713	438,441 19 1	498,557	579,379 8 10	494,068	399,968 15 1	395,078	253,271 19 6	332,642
Total - - £.	658,040	925,862 12 8	847,627	1,048,363 6 6	890,229	728,266 11 3	652,031	463,394 17 6	538,044

Machinery	- -	- - -	1,854	2,235 4 8	44,242	17,901 15 8	11,040	6,775 13 11	10,130
Maintenance - - - - - - - -	42,261	62,628 1 10	58,416	43,109 5 7					
New - - - - - - - - -									
Total - - £.	42,261	62,628 1 10	60,270	45,344 10 3	44,242	17,901 15 8	11,040	6,775 13 11	10,130
Buildings:									
New and additions - - - - -	57,317	65,730 19 10	63,678	56,612 16 2	- -	- - -	Taken in Vote 14.	—	—
Maintenance - - - - - - - -			17,936	18,521 9 1					
Total - - £.	57,317	65,730 19 10	81,614	75,134 5 3	—	—	—	—	—
Hire of horses - - - - - - -	5,500	5,750 7 –	6,500	5,273 9 8	5,281	4,742 8 9	4,535	4,551 3 5	5,100
Freight - - - - - - - - - -	18,000	22,843 17 11	18,000	29,905 1 7	18,700	27,625 10 11	20,000	18,557 18 8	16,635
Police - - - - - - - - - -	10,584	11,482 19 11	10,912	10,947 – 5	- -	- - -	- -	- - -	12,548
Supplementary Vote for the conversion of small arms - - - - - - - - - -	245,000	—	—	—	—	—	—	—	—
TOTAL Materials and Miscellaneous* (carried to Statement, E., page 9) £.	1,036 702	1,094,298 19 2	1,024,923	1,214,967 13 8	958,452	778,536 6 7	687,606	493,279 13 6	582,457
TOTAL (carried to Statement E., page 9) - £.	1,758,473	1,906,077 18 3	1,928,068	2,064,178 17 10	1,735,370	1,511,540 9 –	1,254,989	1,038,495 1 8	1,062,548
Store Services in other Votes:									
Buildings - - - - (Amounts brought from page 17.)	11,163	10,534 – –	33,556	20,756 – –	94,675	84,019 – –	89,246	85,884 2 9	53,356
Inspector of Works - - (Amounts brought from page 17.)	- -	- - -	- -	- - -	3,755	3,597 18 10	3,720	3,720 – –	3,840
Police - - - - (Amounts brought from page 17.)	- -	- - -	- -	- - -	11,646	12,650 – –	12,602	11,798 3 7	—
Amount taken in other Votes for stores to be supplied by the Store Department (brought from page 16) - - - - - - -	130,429	129,287 11 9	142,162	142,567 17 10	180,207	103,481 9 11	—	—	—
GRAND TOTAL (carried to Statement E., page 9) - - - - - - - £.	1,900,065	2,045,899 10 –	2,103,786	2,227,502 15 8	2,025,653	1,715,288 17 9	1,360,557	1,139,897 8 –	1,119,744

* Material.

APPENDIX No. 4.

STATEMENT of AMOUNTS included in other VOTES for STORES and the EXPENDITURE.

	1866-7.			1867-8.			1868-9.			
	In what Vote and Page.	Amount Voted.	Amount Expended.	In what Vote and Page.	Amount Voted.	Amount Expended.	In what Vote and Page.	Amount Voted.	Amount Expended.	
		£.	£. s. d.		£.	£. s. d.		£.	£. s. d.	
Royal Engineer Establishment, Chatham.	- - -	680	- - -	- - -	1,880	- - -	- - -	2,800		
			1,809 15 2			3,602 19 4			4,908 6 2	
Field Works - - - -	Vote 1 - p. 16	1,500	-	Vote 1 - p. 17	1,500	- - -	Vote 1 - p. 18	2,500		
Field Works, other Stations - -	- - -	1,353	544 8 6	- - -	1,353	985 3 5	- - -	1,356	607 12 6	
Commissariat Implements and Tools - - - - -	Vote 2 - p. 9	5,000	2,100 4 2	Vote 2 - p. 21	4,152	4,152 - -	Vote 2 - p. 22	3,911	1,170 16 10	After 1868-9, the money required for these services was included in the Store Vote.
Barrack Stores - - - -	Vote 4 - p. 23	73,000	72,938 17 4	- - -	84,000	74,492 14 4	Vote 4 - p. 27	114,000	49,697 6 1	
Billiard Tables - - - -	- - -	-	- - -	Vote 4 - p. 25	2,000	- nil - -		2,000		
Hospital - - - - -	Vote 7 - p. 27	6,000	8,639 15 -	Vote 7 - p. 19	9,000	7,909 17 11	Vote 7 - p. 35	6,500	7,142 8 3	
Military Prison - - - -	Vote 6 - p. 25	2,000	2,343 4 9	Vote 6 - p. 27	1,800	1,949 - 11	Vote 6 - p. 31	1,800	1,412 18 8	
Educational - - - -	Vote 15 - p. 56, p. 59	1,896	1,156 15 -	Vote 15 - p. 58, p. 61, p. 62	1,477	1,477 - -	Vote 15 - p. 66, p. 69, p. 70	2,340	1,114 9 6	
Experimental - - - -	Vote 17 - p. 66	39,000	39,754 11 10	Vote 17 - p. 68	35,000	47,999 1 11	Vote 17 - p. 79	42,000	37,272 14 1	
Instruction of Soldiers in Trades -	- - -	-	- - -	- - -	-	- - -	Vote 17 - p. 81	1,000	154 17 10	
TOTAL (carried to page 15, and also to Statement E., page 9) - - - £.	- - -	130,429	129,287 11 9	- - -	142,162	142,567 17 10	- - -	180,207	103,481 9 11	

APPENDIX No. 5.

RETURN showing the AMOUNTS taken in the ESTIMATES for POLICE and BUILDINGS, and the EXPENDITURE under those Heads.

	1866-7.		1867-8.		1868-9.		1869-70.		1870-1.
	Voted.	Actual Expenditure.	Voted.	Actual Expenditure.	Voted.	Actual Expenditure.	Voted.	Expenditure.	Voted.
	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.	£.
Manufacturing Departments (from page 11) - -	50,317	58,609 16 5	81,614	75,134 5 3	61,843	47,978 - -	33,410	30,048 2 9	18,541
Military Store, Woolwich (from page 13) - - -	7,000	7,121 3 5	* 17,456	8,099 - -	19,132	26,985 - -	37,666	37,666 - -	25,315
Military Store Stations (from page 13) - - -	11,163	10,534 - -	* 16,100	12,657 - -	13,700	9,056 - -	18,170	18,170 - -	9,500
	68,480	76,264 19 10	115,170	95,890 5 3	94,675	84,019 - -	89,246	85,884 2 9	53,356
Deduct Amounts taken in Store Votes - -	57,317	65,730 19 10	81,614	75,134 5 3	—	—	—	—	—
Amount taken and expended on Works in Engineer Vote (carried to page 11) - - - - - - -	11,163	10,534 - -	33,556	20,756 - -	94,675	84,019 - -	89,246	85,884 2 9	53,356
Amount taken and Expended in Engineer Vote for the Establishment of the Inspector of Works (carried to Abstract, page 9) - - - - - - - -	- -	- -	- -	- -	3,755	3,597 18 10	3,720	3,720 - -	3,840
POLICE.									
Manufacturing Departments (carried to page 11) -	1,653	1,833 19 9	6,751	7,034 1 3	6,662	6,630 - -	9,828	9,292 9 -	4,515
Military Store Departments (carried to page 13) - -	8,931	9,649 - 2	4,161	3,912 19 2	4,984	6,020 - -	2,774	2,505 14 7	7,895
	10,584	11,482 19 11	10,912	10,947 - 5	11,646	12,650 - -	12,602	11,798 3 7	12,410
Deduct Amount taken in Store Votes - -	10,584	11,482 19 11	10,912	10,947 - 5	- -	- -	- -	- -	12,410
Amount taken in other Votes (carried to page 15)	Nil.	Nil.	Nil.	Nil.	11,646	12,650 - -	12,602	11,798 3 7	Nil.

* Carried to page 13 in one set of aggregate amounts.

Appendix No. 6.

RETURN showing the Distribution of the Amounts Estimated and Expended for Stores from 1866 to 1870.

	1866-7.		1867-8.		1868-9.		1869-70.	
	Actual Expenditure.	Estimate.	Actual Expenditure.	Estimate.	Actual Expenditure.	Estimate.	Actual Expenditure.	Estimate.
	£. s. d.	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.	£.
Purchase and Repair of Small Arms	76,415 15 7	124,150	245,049 13 1	131,000	64,294 – 8	76,000	39,506 9 10	25,000
" " Iron Ordnance	8,726 13 3	30,000	12,087 15 7	10,400	21,196 5 1	10,400	8,427 5 6	26,000
" " Gunpowder	16,476 11 11	16,500	17,010 1 11	15,600	8,673 16 –	9,700	8,263 12 2	8,000
" " Saltpetre	35,620 14 1	26,727	514 – 2	- -	3,930 12 4	- -	- - -	20,000
" " Powder Barrels	1,054 12 7	4,473	- - -	2,000	15 15 7	2,000	52 8 11	—
" " Machinery	5,586 8 6	8,250	260 1 8	- -	- - -	800	150 – –	2,000
" " Camp Equipage	29,506 9 9	35,700	41,712 7 8	18,600	22,607 7 1	11,300	8,864 5 5	10,000
" " Accoutrements	22,714 8 6	21,360	25,136 6 1	51,100	22,977 15 –	49,000	7,011 15 7	34,000
" " Timber	5,251 12 4	5,300	4,443 16 8	4,400	6,234 3 –	6,500	7,234 – 5	8,000
" " Miscellaneous Stores	196,952 6 –	65,500	179,936 17 –	68,300	132,347 5 2	149,738	111,966 9 8	189,718
" " Materials for Packing	7,034 9 2	6,700	16,184 17 5	10,200	5,572 10 –	8,200	1,586 16 9	6,000
" " Vessels, Boats, Sails, &c.	8,886 10 11	9,210	8,340 11 10	7,800	4,997 12 7	7,650	4,677 16 1	7,000
" " Coals for Vessels, &c.	1,061 17 9	1,130	1,115 16 11	1,400	2,727 13 4	4,220	1,733 14 7	10,000
Freight, Coastwise	22,843 17 11	18,000	29,905 1 7	18,000	27,625 10 11	18,700	18,557 18 8	20,000
Hire of Horses, Woolwich	5,750 7 –	5,500	5,273 9 8	6,500	1,868 4 11	1,760	487 7 9	2,000
Re-browning Armstrong Guns	- - -	- -	3 12 7	100	—	—	—	—

Supply and Repair of Projectiles	- - -	- -	2,205 15 7	3,600	3,752 14 11	- -	1,264 15 6	1,000
„ of Gun Carriages and Wagons	- - -	- -	17,319 1 11	31,000	22,684 13 4	40,830	27,163 9 5	12,000
„ of Ammunition Small Arms	- - -	- -	163 19 3	3,200	2,574 11 9	—	—	—
„ of Saddlery and Harness	- - -	- -	13,714 8 9	18,400	17,772 5 11	40,890	8,479 - 7	10,000
Billiard Tables	- - -	- -	- - -	- -	- - -	- -	1,624 1 9	2,000
Metals	- - -	- -	- - -	- -	- - -	782	3,294 10 6	8,000
Buildings	7,121 3 5	7,000	- - -	- -	—	—	—	—
Police	9,649 - 2	8,931	3,912 19 2	4,161	—	—	—	—
Total Military Store - - - £.	460,652 18 10	394,431	624,290 14 6	405,761	371,852 17 7	438,470	260,345 19 1	400,718
Manufacturing Departments.								
Materials	481,107 3 6	338,897	463,424 4 1	343,270	319,335 19 10	384,659	197,860 12 6	210,953
Miscellaneous Stores	35,053 7 4	77,393	- - -	127,257	66,571 9 8	88,360	24,383 12 4	64,360
Machinery	57,041 13 4	34,011	45,084 8 7	60,270	17,901 15 8	43,442	6,625 13 11	9,040
Hire of Horses	- - -	- -	- - -	- -	2,874 3 10	3,521	4,063 15 8	2,535
Buildings	58,609 16 5	50,317	75,134 5 3	81,614	—	—	—	—
Police	1,833 19 9	1,653	7,034 1 3	6,751	—	—	—	—
Supplementary Estimate, Small Arms	- - -	140,000	—	—	—	—	—	—
Total Manufacturing Departments - - £.	633,646 - 4	642,271	590,676 19 2	619,162	406,683 9 -	519,982	232,933 14 5	286,888
Grand Total - - - £.	1,094,298 19 2	1,036,702	1,214,967 13 8	1,024,923	778,536 6 7	958,452	493,279 13 6	687,606

N.B.—The particulars here given merge in the foregoing Statements and Appendices.

APPENDIX No. 7.

STATEMENT of the SUMS Expended in 1866–7

	Royal Carriage Department.	Royal Gun Factories.	Royal Laboratory.	Chemical Establishment.	Gas Factory.	Medical Establishment.	General School.	Royal Small Arms Factories.	Royal Gunpowder Factory.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Pay	9,064 7 10	7,800 3 11	7,078 1 8	2,350 7 1	85 12 6	1,315 12 10	381 7 9	8,160 2 –	2,378 17 8
Contingencies / Rents	2,091 10 3	2,837 6 5	3,106 8 2	31 9 9	6 11 3	124 2 2	38 15 9	3,290 16 10	456 3 8
Wages	133,597 13 10	108,617 14 8	144,789 14 1	396 8 11	2,498 1 –	- -	- -	152,400 2 –	9,875 12 11
TOTAL Pay, Wages, &c. £.	144,753 11 11	119,255 5 –	154,974 3 11	2,778 5 9	2,590 4 9	1,439 15 –	420 3 6	163,851 – 10	12,710 14 3
Timber / Fuel / Metals / Manufactured Stores	97,421 17 3	183,117 18 10	181,152 1 9	869 1 7	7,314 1 5	- -	- -	35,053 7 4	2,685 3 11
Hire of Horses	- -	- -	- -	- -	- -	-	- -	- -	- -
Freight	- -	- -	- -	- -	- -	- -	- -	- -	- -
Machinery	11,307 5 2	25,763 8 7	14,311 17 6	- -	320 – –	- -	- -	4,647 15 6	381 6 7
Buildings	10,277 18 9	25,557 15 4	8,815 12 7	422 15 10	631 17 3	26 15 6	52 1 2	8,532 2 6	2,441 14 2
Police	- -	- -	- -	- -	- -	- -	- -	1,055 7 8	778 12 1
TOTAL Materials and Miscellaneous £.	119,007 1 2	234,439 2 9	204,279 11 10	1,291 17 5	8,265 18 8	26 15 6	52 1 2	49,288 13 –	6,286 16 9
GRAND TOTAL £.	263,760 13 1	353,694 7 9	359,253 15 9	4,070 3 2	10,856 3 5	1,466 10 6	472 4 8	213,139 13 10	18,997 11 –

STATEMENT of the SUMS Expended in 1867–8

	Royal Carriage Department.	Royal Gun Factories.	Royal Laboratory.	Chemical Establishment.	Gas Factory.	Medical Establishment.	General School.	Royal Small Arms Factories.	Royal Gunpowder Factory.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Pay	9,472 8 9	8,156 3 3	7,089 10 6	2,319 – 11	90 8 7	1,595 17 10	562 7 8	9,899 8 5	2,820 6 –
Contingencies	3,413 5 –	4,057 12 3	5,281 15 1	244 16 7	- -	- -	- -	3,201 16 1	604 5 4
Rents	—	—	—	—	—	—	—	—	—
Wages	137,680 10 4	89,722 4 2	184,724 – 3	635 12 10	3,020 10 2	- -	- -	149,253 4 5	9,718 18 –
TOTAL Pay, Wages, &c. £.	150,566 4 1	101,935 19 8	197,095 5 10	3,199 10 4	3,110 18 9	1,595 17 10	562 7 8	162,354 8 11	13,143 9 4
Timber / Fuel / Metals / Manufactured Stores	57,584 18 2	118,533 18 –	233,494 10 –	739 17 8	8,966 11 5	- -	- -	26,246 6 5	7,659 – 11
Hire of Horses	- -	- -	- -	- -	- -	- -	- -	- -	- -
Freight	- -	- -	- -	- -	- -	- -	- -	- -	- -
Machinery	4,831 3 –	12,414 8 6	23,516 11 7	- -	1,042 4 –	- -	- -	1,429 18 6	672 3 –
Buildings	10,930 4 11	17,833 1 7	29,759 15 11	139 19 11	1,273 16 7	- -	- -	4,878 6 4	7,132 19 8
Police	1,293 17 7	1,293 17 8	1,293 17 8	- -	- -	- -	- -	993 1 8	998. 8 7
TOTAL Utensils and [illegible]	[illegible]	150,075 5 9	288,064 15 2	879 17 7	11,282 12 –	- -	- -	33,547 12 11	16,462 12 2
GRA		252,011 5 5	485,160 1 –	4,079 7 11	14,393 10 9	1,595 17 10	562 7 8	195,902 1 10	29,606 1 6

N.B.—The particulars here given merge in the foregoing Statements and Appendices.

- - - - - - - - - APPENDIX No. 7.

in the MANUFACTURING and STORE DEPARTMENT.

Royal Ordnance Factory, Portsmouth.	Royal Laboratory, Bull Point.	Superintendent of Machinery.	Establishment for Instruction.	Inspector of Works.	TOTAL.	STORE ESTABLISHMENT. Military Store.	Inspector of Stores.	Vessels.	TOTAL.	GRAND TOTAL.
£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
783 14 7	705 2 3	1,599 12 7	2,473 19 10	2,993 7 7	47,170 10 1	62,349 19 3	2,299 9 8 (Military).	- -	64,649 8 11	111,819 19 -
232 10 2	405 8 5	128 8 11	- -	- -	12,749 11 9	823 12 6	- -	- -	823 12 6	13,573 4 3
9,786 11 8	6,662 7 3	341 14 4	- -	- -	568,966 - 8	101,582 8 2	6,342 7 9 (Civil.)	9,494 19 3	117,419 15 2	686,385 15 10
10,802 16 5	7,772 17 11	2,069 15 10	2,473 19 10	2,993 7 7	628,886 2 6	164,755 19 11	8,641 17 5	9,494 19 3	182,892 16 7	811,778 19 1
						5,251 12 4	- -	- -	5,251 12 4	5,251 12 4
						- -	- -	1,061 17 9	1,061 17 9	1,061 17 9
6,018 18 9	2,528 - -	- -	- -	- -	516,160 10 10	- -	- -	- -	- -	516,160 10 10
						—	—	—	—	—
						403,388 11 9	- -	- -	403,388 11 9	403,388 11 9
- - -	- -	- -	- -	- -	- - -	5,750 7 -	- -	- -	5,750 7 -	5,750 7 -
- - -	- -	- -	- -	- -	- - -	22,843 17 11	- -	- -	22,843 17 11	22,843 17 11
293 - -	17 - -	- -	- -	- -	57,041 13 4	5,586 8 6	- -	- -	5,586 8 6	62,628 1 10
366 6 10	1,122 7 6	- -	- -	362 9 -	58,609 16 5	7,121 3 5	- -	- -	7,121 3 5	65,730 19 10
- - -	- -	- -	- -	- -	1,833 19 9	9,649 - 2	- -	- -	9,649 - 2	11,482 19 11
6,678 5 7	3,667 7 6	- -	- -	362 9 -	633,646 - 4	459,591 1 1	- -	1,061 17 9	460,652 18 10	1,094,298 19 2
17,481 2 -	11,440 5 5	2,069 15 10	2,473 19 10	3,355 16 7	1,262,532 2 10	624,347 1 -	8,641 16 5	10,556 17 -	643,545 15 5	1,906,077 18 3

by the MANUFACTURING and STORE ESTABLISHMENTS.

Royal Ordnance Factory, Portsmouth.	Royal Laboratory, Bull Point.	Superintendent of Machinery.	Establishment for Instruction.	Inspector of Works.	TOTAL.	STORE ESTABLISHMENTS. Military Store.	Inspector of Stores.	Vessels.	TOTAL.	GRAND TOTAL.
£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
925 1 9	765 1 6	2,167 1 11	2,539 10 3	3,489 8 11	51,891 16 3	62,959 18 8	2,255 18 10	- -	65,216 17 6	117,108 13 9
185 14 6	534 2 -	- -	- -	- -	17,523 6 10	1,511 10 9	- -	- -	1,511 10 9	19,034 17 7
—	—	—	—	—	—	—	—	—	—	—
10,030 - 2	6,338 18 11	- -	- -	- -	591,123 19 3	106,233 12 3	5,523 10 9	10,186 10 7	121,943 13 7	713,067 12 10
11,140 16 5	7,638 2 5	2,167 1 11	2,539 10 3	3,489 8 11	660,539 2 4	170,705 1 8	7,780 9 7	10,186 10 7	188,672 1 10	849,211 4 2
						4,443 16 8	- -	- -	4,443 16 8	4,443 16 8
						- -	- -	1,115 16 11	1,115 16 11	1,115 16 11
6,092 - 4	4,107 1 2	- -	- -	- -	463,424 4 1	- -	- -	- -	- -	463,424 4 1
						—	—	—	—	—
						579,379 8 10	- -	- -	579,379 8 10	579,379 8 10
- - -	- -	- -	- -	- -	- - -	5,273 9 8	- -	- -	5,273 9 8	5,273 9 8
- - -	- -	- -	- -	- -	- - -	29,905 1 7	- -	- -	29,905 1 7	29,905 1 7
181 - -	997 - -	- -	- -	- -	45,084 8 7	260 1 8	- -	- -	260 1 8	45,344 10 3
1,001 2 3	1,777 - 2	- -	- -	407 17 11	75,134 5 3	- -	- -	- -	- -	75,134 5 3
712 15 10	448 2 3	- -	- -	- -	7,034 1 3	3,912 19 2	- -	- -	3,912 19 2	10,947 - 5
7,986 18 5	7,329 3 7	- -	- -	407 17 11	590,676 19 2	623,174 17 7	- -	1,115 16 11	624,290 14 6	1,214,967 13 8
19,127 14 10	14,967 6 -	2,167 1 11	2,539 10 3	3,897 6 10	1,251 216 1 6	793,879 19 3	7,780 9 7	11,302 7 6	812,962 16 4	2,064,178 17 10

APPENDIX No. 7—*continued* - - - - - - - -

STATEMENT of the SUMS Expended in 1868-9,

	Royal Carriage Department.	Royal Gun Factories.	Royal Laboratory.	Chemical Establishment.	Gas Factory.	Medical Establishment.	General School.	Royal Small Arms Factories.	Royal Gunpowder Factory.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Pay - - - - - - - -	11,244 2 9	6,358 1 3	7,248 3 5	2,453 12 7	88 1 3	1,158 8 6	526 6 -	8,372 - 6	2,796 1 11
Contingencies - - - -	556 12 8	403 3 -	928 7 9	192 14 3	12 12 -	3 3 11	3 7 10	1,394 7 11	514 1 8
Rents - - - - - - -	- -	25 14 8	- -	21 19 3	- -	- -	25 17 3	751 12 2	41 13 8
Wages - - - - - - -	113,850 18 1	63,713 16 4	155,360 4 10	630 10 9	2,647 4 4	- -	- -	135,950 14 3	10,837 10 9
TOTAL Pay, Wages, &c. - - £.	125,651 13 6	70,500 15 3	163,536 16 -	3,298 16 10	2,747 17 7	1,161 12 5	555 11 1	146,468 14 10	14,189 8 -
Timber - - - - - - -	16,821 3 3	693 10 11	1,988 14 5	- -	- -	- -	- -	4,033 16 11	71 19 7
Fuel - - - - - - -	5,937 12 4	26,765 11 7	9,778 18 6	- -	5,162 9 10	- -	- -	4,244 18 8	2,182 18 8
Metals - - - - - - -	29,324 17 8	70,406 3 10	125,711 4 7	- -	- -	- -	- -	14,336 13 3	118 14 6
Manufactured Stores - - -	13,330 10 8	5,425 11 4	34,660 12 9	165 1 5	529 15 9	- -	- -	7,810 5 4	1,463 4 2
Hire of Horses - - - -	438 9 4	1,431 11 8	1,004 2 10	- -	- -	- -	- -	- -	- -
Freight - - - - - - -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Machinery - - - - - -	1,856 3 2	10,743 5 6	3,246 4 3	10 - -	35 10 -	- -	- -	12 - -	1,994 4 10
TOTAL Materials and Miscellaneous - £.	67,708 16 5	115,465 14 10	176,389 17 4	175 1 5	5,727 15 7	- -	- -	30,437 14 2	5,831 1 9
GRAND TOTAL - - - £.	193,360 9 11	185,966 10 1	339,926 13 4	3,473 18 3	8,475 13 2	1,161 12 5	555 11 1	176,906 9 -	20,020 9 9

STATEMENT of the SUMS Expended in 1869-70,

	Royal Carriage Department.	Royal Gun Factories.	Royal Laboratory.	Chemical Establishment.	Gas Factory.	Medical Establishment.	General School.	Royal Small Arms Factories.	Royal Gunpowder Factory.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Pay - - - - - - - -	7,647 9 8	7,589 10 8	6,632 17 7	2,281 1 8	103 3 -	1,266 1 4	466 2 11	8,399 14 4	2,895 3 5
Contingencies - - - -	576 4 2	515 16 7	1,150 10 7	163 9 4	6 6 -	13 1 10	6 11 6	1,474 16 8	647 8 5
Rents - - - - - - -	- -	- -	- -	- -	- -	- -	- -	182 19 7	103 16 2
Wages - - - - - - -	84,297 5 4	56,640 10 10	78,041 11 9	472 15 10	2,332 10 3	- -	- -	99,066 1 9	9,532 14 9
TOTAL Pay, Wages, &c. - - £.	92,520 19 2	64,745 18 1	85,824 19 11	2,917 6 10	2,441 19 3	1,279 3 2	472 14 5	109,123 12 4	13,179 2 9
Timber - - - - - - -	6,147 7 9	134 12 9	2,210 1 5	- -	- -	- -	- -	107 14 11	- -
Fuel - - - - - - -	5,159 6 7	22,711 15 8	5,600 3 2	- -	5,285 16 6	- -	- -	4,328 11 4	1,399 14 -
Metals - - - - - - -	13,772 18 5	56,858 13 1	44,264 12 3	- -	- -	- -	- -	28,140 19 1	47 6 7
Saltpetre and Sulphur - - -	- -	- -	- -	- -	- -	- -	- -	- -	1,689 8 9
Manufactured Stores - - -	4,079 1 9	4,540 7 11	12,046 6 7	499 13 -	295 6 -	- -	- -	1,893 14 9	955 - 7
Hire of Horses - - - -	312 8 -	1,204 15 1	2,546 12 7	- -	- -	- -	- -	- -	- -
Freight - - - - - - -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Machinery - - - - - -	408 4 -	2,723 17 9	923 11 -	- -	3 15 -	- -	- -	1,428 8 -	1,137 18 2
Buildings - - - - - -	—	—	—	—	—	—	—	—	—
Police - - - - - - -	—	—	—	—	—	—	—	—	—
TOTAL Materials, Miscellaneous - £.	29,879 6 6	88,174 2 3	67,591 7 -	499 13 -	5,584 17 6	- -	- -	35,899 8 1	5,229 8 1
GRAND TOTAL - - - £.	122,400 5 8	152,920 - 4	153,416 6 11	3,416 19 10	8,026 16 9	1,279 3 2	472 14 5	145,023 - 5	18,408 10 10

N.B.—The particulars here given merge in the foregoing Statements and Appendices.

APPENDIX No. 7—*continued.*

by the MANUFACTURING and STORE ESTABLISHMENTS.

Royal Ordnance Factory, Portsmouth.	Royal Laboratory, Bull Point.	Superintendent of Machinery.	Establishment for Instruction.	TOTAL.	STORE ESTABLISHMENT.				GRAND TOTAL Manufacturing and Store Establishments.
					Military Store.	Inspector of Stores.	Vessels.	TOTAL.	
£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
1,107 4 4	915 10 11	1,650 7 3	2,511 12 11	46,429 13 7	58,698 11 5	939 4 3	- - -	59,637 15 8	106,067 9 3
122 1 8	370 1 2	135 16 6	- - -	4,636 10 4	2,603 16 2	107 9 3	8 16 -	2,720 1 5	7,356 11 9
104 7 1	32 16 8	5 19 11	- - -	1,010 - 8	69 - 11	- - -	- - -	69 - 11	1,079 1 7
8,789 13 -	5,224 10 10	394 2 6	- - -	497,399 5 8	110,556 12 -	1,257 18 3	9,287 3 11	121,101 14 2	618,500 19 10
10,123 6 1	6,542 19 7	2,186 6 2	2,511 12 11	549,475 10 3	171,928 - 6	2,304 11 9	9,295 19 11	183,528 12 2	733,004 2 5
502 9 10	1 14 6	- - -	- - -	24,113 9 5	6,234 3 -	- - -	- - -	6,234 3 -	30,347 12 5
560 6 6	195 - 9	- - -	- - -	54,827 16 10	1,643 3 10	- - -	1,084 9 6	2,727 13 4	57,555 10 2
496 7 4	- 12 5	- - -	- - -	240,394 13 7	- - -	- -	- - -	- - -	240,394 13 7
2,413 8 11	772 19 4	- - -	- - -	66,571 9 8	333,397 5 5	- - -	- - -	333,397 5 5	399,968 15 1
- - -	- - -	- - -	- - -	2,874 3 10	1,868 4 11	- - -	- - -	1,868 4 11	4,742 8 9
- - -	- -	- - -	- - -	- - -	27,625 10 11	- - -	- - -	27,625 10 11	27,625 10 11
- - -	- - -	4 7 11	- - -	17,901 15 8	- - -	- - -	- - -	- - -	17,901 15 8
3,972 12 7	970 7 -	4 7 11	- - -	406,683 9 -	370,768 8 1	- - -	1,084 9 6	371,852 17 7	778,536 6 7
14,095 18 8	7,513 6 7	2,190 14 1	2,511 12 11	956,158 19 3	542,696 8 7	2,304 11 9	10,380 9 5	555,381 9 9	1,511,540 9 -

in the MANUFACTURING and STORE ESTABLISHMENTS.

Royal Ordnance Factory, Portsmouth.	Royal Laboratory, Bull Point.	Superintendent of Machinery.	Establishment for Instruction.	TOTAL.	STORE ESTABLISHMENT.				GRAND TOTAL.
					Military Store.	Inspectors of Stores.	Vessels.	TOTAL.	
£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
690 6 9	468 8 6	1,655 8 7	2,414 13 -	42,510 1 5	52,437 15 11	991 7 7 (Military). 60 17 5	- - -	53,429 3 6	95,939 4 11
41 11 7	235 3 3	162 13 2	- - -	4,993 13 1	2,874 3 4		- - -	2,935 - 9	7,928 13 10
3 6 3	- - -	- - -	- - -	290 2 -	- - -	- - -	- - -	- - -	290 2 -
638 5 9	834 16 2	372 6 4	- - -	332,228 18 9	97,889 2 7	1,171 13 9	9,767 12 4	108,828 8 8	441,057 7 5
1,373 10 4	1,538 7 11	2,190 8 1	2,414 13 -	380,022 15 3	153,201 1 1	2,223 18 9	9,767 12 4	165,192 12 11	545,215 8 2
- - -	- - -	- - -	- - -	8,599 16 10	7,234 - 5	- - -	- - -	7,234 - 5	15,833 17 3
- - -	- - -	- - -	- - -	44,485 7 3	1,733 14 7	- - -	- - -	1,733 14 7	46,219 1 10
- - -	1 10 3	- - -	- - -	143,085 19 8	3,294 10 6	- - -	- - -	3,294 10 6	146,380 10 2
- - -	- - -	- - -	- - -	1,689 8 9	- - -	- - -	- - -	- - -	1,689 8 9
15 13 -	5 2 6	53 6 3	- - -	24,383 12 4	225,997 11 9	- - -	2,890 15 5	228,888 7 2	253,271 19 6
- - -	- - -	- - -	- - -	4,063 15 8	487 7 9	- - -	- - -	487 7 9	4,551 3 5
- - -	- - -	- - -	- - -	- - -	18,557 18 8	- - -	- - -	18,557 18 8	18,557 18 8
- - -	- - -	- - -	- - -	6,625 13 11	150 - -	- - -	- - -	150 - -	6,775 13 11
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
15 13 -	6 12 9	53 6 3	- - -	232,933 14 5	257,455 3 8	- - -	2,890 15 5	260,345 19 1	493,279 13 6
1,389 3 4	1,545 - 8	2,243 14 4	2,414 13 -	629,856 9 8	410,656 4 9	2,223 18 9	12,658 7 9	425,538 12 -	1,038,495 1 8

STATEMENT (F.)

MISCELLANEOUS SERVICES, Included in Votes 9 and 10 for 1870–71, previously Estimated under Votes as shown below.	1866–7. Estimate.	1866–7. Expenditure.	1867–8. Estimate.	1867–8. Expenditure.	1868–9. Estimate.	1868–9. Expenditure.	1869–70. Estimate.	1869–70. Expenditure.	1870–71. Estimate.
VOTE 1.	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.	£. s. d.
Military Officers acting as Assistant Controllers - -	1,629	1,629 – –	1,652	1,652 – –	1,793	1,793 – –	1,953	2,456 – –	4,380 – –
Military Labourers - - - - - - - -	5,450	5,260 – 4	7,000	5,677 15 4	7,100	5,791 2 –	6,360	5,954 – 6	6,143 – –
VOTE 6.									
Subsistence of Men in Military Prisons - - - -									
Ditto - - Civil Gaols - - - -	24,232	27,899 15 10	28,000	30,626 7 1	27,500	34,537 5 10	21,830	24,279 18 4	16,502 – –
Ditto - - Garrison and Barrack Cells - -									
VOTE 8.									
Provisions for Militia - - - - - - - -	10,000	14,466 18 4	11,000	14,479 12 3	16,000	15,313 2 3	15,000	16,044 17 6	15,200 – –
Advertisements - - - - - - - - -	3,900	4,667 15 7	4,000	5,835 11 8	5,000	5,066 12 10	4,000	3,785 7 10	3,530 – –
Martello Tower Keepers - - - - - - -	180	195 17 3	200	164 4 –	200	156 6 –	100	151 5 –	100 – –
Police - - - - - - - - - - -	978	974 – 9	1,031	1,027 7 6	1,773	3,209 17 11	4,539	4,534 8 7	5,719 – –
TOTALS (carried to Explanatory Paper, page 3) - - - - - - £.	46,369	55,093 8 1	52,883	59,462 17 10	59,366	65,867 6 10	53,782	57,205 17 9	51,574 – –

STATEMENT (G.)

DEPARTMENTAL CORPS.	1866–7. Estimate.	1866–7. Expenditure.	1867–8. Estimate.	1867–8. Expenditure.	1868–9. Estimate.	1868–9. Expenditure.	1869–70. Estimate.	1869–70. Expenditure.	1870–71. te.
VOTE 1.	£.	£. s. d.	£.	£. s. d.	£.	£. s. d.	£.	£. d.	£. s. d.
Military Train - - - - - - - - -	67,765	69,152 5 5	68,770	75,482 10 2	72,886	75,174 4 1	72,981	58,672 19 2	Army Service Corps 91,350 – –
Commissariat Staff Corps - - - - - - -	19,439	17,402 8 9	19,439	15,301 7 8	21,323	18,990 11 7	21,336	19,634 4 8	
Military Store Staff Corps - - - - - - -	6,597	6,088 13 3	10,078	10,545 19 11	14,511	14,376 9 2	14,918	14,430 14 6	
Army Service Corps - - - - - - - -	- -	- -	- -	- -	- -	- -	- -	3,803 9 9	
TOTALS (carried to Explanatory Paper, page 3) - - - - - £.	93,801	92,643 7 5	98,287	101,329 17 9	108,720	108,541 4 10	109,235	96,541 8 1	91,350 – –

ARMY (CONTROL DEPARTMENT).

RETURN, in Detail, of the SAVINGS effected by the CONTROL DEPARTMENT since its Establishment in the WAR OFFICE; detailing, also, the COST of the Control Department since its Organisation.

(*Colonel Sykes.*)

Ordered, by The House of Commons, *to be Printed,*
2 *August* 1870.

409.

Under 3 *oz.*

ARMY AGENCY.

RETURN to an Address of the Honourable The House of Commons, dated 24 July 1871;—*for*,

"COPY of any OFFICIAL REPORT to the Secretary of State for War during the present Year on the subject of ARMY AGENCY."

War Office, 27 July 1871.

EDWARD CARDWELL.

ARMY AGENCY.

THE SECRETARY OF STATE having requested the Financial Secretary and the Accountant General to Report to him generally on the subject of Army Agency, giving particular attention to the following points:—

I.—A Report should be made as to the details of the duties now performed by the Agents—

a. On behalf of the Public;

b. On behalf of the Officers;

II.—Show the Cost of Agency for One Year, the amounts received by each Agent, and the Nature of the Accounts rendered by them;

III.—Detail the course adopted for supplying Regimental Paymasters with the amount required for subsisting the Troops at home and abroad; and consider whether any inconvenience would arise if advances to Paymasters at home were made direct to the Paymasters without the intervention of the Agents;

IV.—State whether it is desirable to relieve the Agents of any portion of their Duties; and, if so, state to what extent and in what manner such Duties should in future be conducted;

V.—State the advantages, or otherwise, of separate Agents for Regiments serving in Ireland;

VI.—State whether it is desirable to continue the present practice of allowing General Officers appointed to the Colonelcy of Regiments to appoint their own Agents; and, if any alteration is recommended, state in what manner it is suggested that the appointments should be made, or what course should be followed;—

VII.—In any alterations that may be suggested an endeavour should be made to secure the Officers, particularly those of the Junior ranks, from any inconvenience which might be incurred by them were they deprived of the advantages they now derive from the Agents;

VIII.—In the event of a suggestion being made to re-adjust the Duties now performed by the Agents, it should be stated what is considered would be a fair remuneration to the Agents for the Duties they may be called upon to perform;

IX.—A General Report should be made on the subject of Agency, and such observations and suggestions offered as have arisen from a full consideration of the subject.

The Report annexed is submitted in accordance with the Secretary of State's instructions.

John C. Vivian.
H. W. S. Whiffin.

War Office, 28 January 1871.

I.—*A Report should be made as to the Details of the Duties now performed by the Agents—*

a. On behalf of the Public;
b. On behalf of the Officers.

a. The duties performed by the agents on behalf of the public are as follows:

Receiving from the Paymaster General the pay of the regiment fortnightly, appropriating part of it to pay such officers as receive their pay direct from the agents, and paying the Paymaster's bills for the remainder of the issue. There is also the duty of paying soldiers' remittances for the benefit of their families, and the effects and credits of soldiers, and the distribution of prize-money.

P. 374, § 1. 7 of Report.

b. With regard to the duties performed by the agents on behalf of the officers, they would appear, from a Memorandum prepared in April 1850, by Messrs. Cox & Co., for the Select Committee on Army and Ordnance Expenditure, to be as follows:—

1. Every officer has the privilege of drawing for the whole or any part of the pay that may be due to him, according to his wants; a system involving great detail, but indispensable to his comfort and convenience.

2. He obtains from the agent without difficulty, in cases of emergency, temporary advances of pay without any charge for interest or other expense. The necessity for these advances is in general of so urgent a nature that officers who have no other resource would, but for the assistance of the agent, often be unable to join their regiments, and be compelled to sell their commissions. Many valuable officers have been preserved to the service by such timely assistance.

3. Officers, more especially when absent on service, depend on the agent for attention to their interests in regard to the purchase of promotion, and occasions frequently occur in which the agent is enabled to render them the most important service, either by answering for, or actually advancing, the purchase money. It is also the agent's duty, in the case of officers selling out of the service, to take care that the necessary arrangements are made with regard to the purchase money to be paid by their successors, to certify the same to the Commander-in-Chief, and to become the intermediate security to both parties until the transaction is finally concluded.

4. Officers on foreign stations find the agent a most convenient channel for conveying to their families, or other persons, such portions of their pay as they may wish to allot for that purpose, and those who have allowances from their relatives receive the money through the same channel.

5. The agent keeps the account of all the private regimental funds for the mess, band, &c., the detail of which is attended with great trouble; and he is the medium through which tradesmen are paid for supplies of necessaries for regiments on foreign service.

6. He submits the claims of officers for passage money on proceeding to, or returning from, foreign stations, and for travelling expenses at home. Likewise their claims for indemnification for losses sustained on service or by shipwreck, and for pensions or allowances for wounds or injuries received on service.

7. It is also his duty to prepare the claims of widows to pensions, and of their children to the compassionate allowance, and to assist them in collecting the documents required in support of the same. The strict observance of forms and regulations, which is ensured by the employment of the agent on these occasions, expedites business, and saves much trouble to the War Office. The public also have, in the experience of the agent, a guarantee against the advancement of improper claims.

II.—*Show*

II.—*Show the Cost of Agency for one year, the Amounts received by each Agent, and the nature of the Accounts rendered by them.*

The amount paid for agency for cavalry, infantry, artillery, and engineers during the year 1869–70 was 36,341 *l.*, and the amount received by each agent was as follows:—

Names of Agents.	Cavalry.	Infantry.	Artillery and Engineers.	Total.
	£.	£.	£.	£.
Messrs. Cox & Co.	3,738	16,885	4,500	25,123
Sir J. Kirkland	-	1,076	-	1,076
Sir Charles McGrigor, Bart., & Co.	-	505	-	505
Messrs. Barron & Smith	-	633	-	633
A. Lawrie, Esq.	-	405	-	405
Messrs. Price & Boustead	-	556	-	556
Messrs. Downes & Son	-	272	-	272
Messrs. Ridgway & Sons	171	142	-	313
Messrs. Hopkinson	443	136	-	579
E. S. Codd, Esq.	-	370	-	370
H. T. Clack, Esq.	282	-	-	282
Messrs. Thacker & Co.	162	-	-	162
Irish Agents.				
Sir E. R. Borough, Bart., & Co.	841	3,612	-	4,453
Messrs. R. Cane & Sons	916	696	-	1,612
Total £.	6,553	25,288	4,500	36,341*

* The total amount paid for agency during the year 1869–70 was 42,401 *l.* For detail, *see* Appendix (D).

The agents render a quarterly account for each regiment, showing the amount issued by them for the pay of officers, the amount disbursed for remittances and effects, and a detail of the advances to regimental paymasters on drafts drawn by them; together with a statement showing their miscellaneous receipts and disbursements.

III.—*Detail the course adopted for supplying Regimental Paymasters with the amount required for subsisting the Troops at home and abroad, and consider whether any inconvenience would arise if advances to Paymasters at home were made direct to the Paymaster without the intervention of the Agents.*

Paymasters are now supplied with cash in the following manner:—

a. Regimental paymasters at home (exclusive of artillery and engineers) furnish direct to this office, on or about the 15th of the month, an estimate in detail of the sum required for the payment of the non-commissioned officers and men, and such officers who receive their pay from the paymaster for the ensuing month. This document is verified by the officer commanding; and after it has been examined in the office of the Accountant General, the amount is then issued to the agents of the regiments in two portions, about three-quarters for the 1st of

of the month, and the balance for the 15th of the month. The paymaster is not advised of the sum so advanced to the agents, but he draws upon them for such sums as he may from time to time require, the agent having the power to limit his advances to the paymaster to such a sum as will not exceed the amount issued on his estimate for the month. The agents and paymasters render quarterly accounts of their receipts and disbursements, in which is shown the amount of each bill or advance made by the agents.

b. Paymasters of regiments abroad obtain from the treasury chest of the station where they are serving, advances, weekly, of the sums they require, the monthly estimates being furnished to the control paymaster. With regard to these regiments, an advance is made to the agents of the sum required by them for the pay of such officers who may be in this country, or who may elect for their own convenience to receive their pay through the agent.

c. Paymasters of artillery furnish monthly estimates of the sums they require for the payment of the non-commissioned officers and men of the brigade to which they are attached; but as it frequently occurs that the batteries forming the brigade are stationed away from head-quarters, the paymaster indicates in his estimates the sum required by the officer commanding each battery. The amounts are then issued direct from this office, by warrant on the Paymaster General, to the paymaster or officer commanding, as the case may be; but the whole sum so advanced is placed to the debit of the paymaster, who has to account for it in his quarterly pay list.

d. The advances to the paymasters of Engineers are made in the same manner as to the Artillery, the officers commanding companies being furnished with the sum required direct from this office; but this is placed to the debit of the paymaster, to whom he renders his company pay lists.

e. The paymasters of the Army Service and Hospital Corps obtain their advances direct from this office.

f. The paymasters of certain recruiting districts receive their advances on monthly estimates through the general agent, Sir J. Kirkland (*see* Section 9, page 11, for proposed arrangements consequent on Sir J. Kirkland's death); but in certain other districts, where the duties are delegated to the paymaster of the control department, they receive them direct from this office, or from the paymaster at the head-quarters of the district.

g. The paymasters of the Depôt Battalion, Chatham, and the Discharge Depôts at Netley and Chichester, receive their advances through the general agent on monthly estimates furnished to this office (*see* Section 9, page 11, for proposed arrangements consequent on Sir J. Kirkland's death).

The above instances show the varying modes of placing funds at the disposal of paymasters for the payment of non-commissioned officers and men; and, considering that the course pursued with regard to the artillery and engineers has worked very satisfactorily for many years, we have no reason to apprehend that any inconvenience would arise were the system universally adopted throughout the service, *i.e.*, the paymasters of every arm of the service should render, as now, their estimates to this office, and the advances thereon should be made direct to them without the intervention of the agents. This would save the poundage of 12 *s.* 6 *d.* per cent. on the amount which is now advanced by the agents (from money placed to their credit by this office) to the paymasters of Infantry and Cavalry, and which in the year 1869–70 amounted to no less than 1,133,900 *l.*, the poundage paid on a portion thereof being 6,170 *l.* A small charge, certainly not exceeding 1 *s.* per cent., might at some stations be claimed for cashing drafts on the Paymaster General; but the amount for this service would be inconsiderable.

We have ascertained from the principal of the issue branch in this office that, were the system we advocate carried out, it would entail little, if any, additional work here; but there is no question that the simplification of the agents' and paymasters' accounts that would ensue would be very considerable, and would more than compensate for any additional labour that might devolve upon the issue branch.

IV.—*State*

IV.—*State whether it is desirable to relieve the Agents of any portion of their Duties; and, if so, state to what extent, and in what manner such Duties should in future be conducted.*

The duties performed by the agents on behalf of the public have already been stated to be as follows:—

a. Issuing the pay of such officers who elect to receive their pay through the agents.

b. Accepting the bills of paymasters of cavalry and infantry regiments at home drawn for the subsistence of their regiments.

c. The payment of the remittances of officers and men serving with regiments in the Colonies and India.

d. The payment of the effects of deceased officers and soldiers who die or become non-effective at Home, in the Colonies, or in India.

a. There is no doubt that were the option granted to officers to receive their pay through the agents or the paymaster withdrawn, a simplification of accounts would be effected, and much labour saved in this office; but there is no question that to the majority of officers the present arrangement is very advantageous, as they mostly keep running or banking accounts with the agents, and draw upon them for such sums and at such intervals as suit their convenience. Under all the circumstances, we are not disposed to recommend any alteration at present.

b. We consider, for the reasons stated above, the agents might, with great public advantage, be relieved of this duty, and the course suggested for its performance adopted from the 1st April next.

c. From an analysis of the agents' accounts for the year 1869-70 it is found that the amount paid by them for remittances was 116,558 *l.*, and the number of payments as under:—

India - - - - - -	9,680
Colonies - - - - - -	634
Home - - - - - -	69

It will be seen that the great bulk of the remittances are from soldiers serving with their regiments in India.

It may be as well to show the complication of accounts which is now induced by the intervention of the regimental agents in these remittance transactions.

The paymasters in India receive from the soldiers, or the captains of their companies on their behalf, the amount which they wish to remit to their families in this country. They then give to the soldier a form of receipt which should be forwarded by him to the remittee, and at the same time the paymasters forward to the agent, through the War Office, a separate form showing the amount and the person to whom it is payable. The agent then informs the remittee, and the amount is paid through a banker or otherwise, the agent charging in his account with this office the sums so paid, supported by the receipts of the remittees.

This completes the transaction, so far as the agent is concerned, but this office has to recover the aggregate of the remittances from the India Office, which is done as follows:—

The regimental paymaster in India debits himself in his monthly pay list, which is rendered to the Circle paymaster, with the amount received by him for remittances, and furnishes to the War Office a monthly statement showing full particulars of the remittances. The military accountant in each Presidency compiles a general monthly return, from the paymaster's accounts, of all the remittances, and forwards the return to the India Office, by which department the same is transmitted to this office, with an intimation that the total sum is held to the credit of this department. It is at once claimed, and passed to the credit of army funds through the Paymaster General.

As there are no paymasters serving with the Royal Artillery in India, the officer commanding each battery renders the same description of voucher and return as is required for a regiment of cavalry or infantry.

The total number of monthly returns rendered to this office annually from India exceeds 2,000.

It will thus be seen that the present arrangements are complicated in the extreme, and, as the India Office in this country pays the remittances of the officers belonging to local corps, it requires the greatest vigilance to prevent erroneous payments.

It appears to us that this office might be relieved of a very troublesome and laborious business were the intervention of the regimental agent with regard to the payment of these remittances done away with. The duty could, and in our opinion should, devolve upon the India Office, and we apprehend there would be no difficulty on the part of that office to undertake it.

Arrangements could doubtless be made to ensure promptness of payment, while the correspondence and adjustment of accounts between the two departments would be obviated.

With regard to the payment of remittances of soldiers serving with their regiments in the Colonies, the amount involved, and the extent of the transactions are so inconsiderable that arrangements could readily be made for paying them direct from this office, as is now done with regard to remittances by staff and departmental officers and others. This could be at once carried out without any increase to the present permanent establishment. The remittances by officers might be paid by the regimental agents, and it might eventually be necessary to require the assistance of two or three additional writers.

d. The course now followed with regard to the distribution of the effects of officers and soldiers who die while serving at Home, in the Colonies, or in India, is as under:—

Home and Colonies.—As a rule, the first action taken in this office is on the receipt of the regimental pay lists, which are rendered quarterly. In these are recorded the names of all the soldiers who may have become non-effective, by death or otherwise, during the quarter. The papers relating to the non-effective accounts of those who are dead are at once registered, and no further action is taken until an application is made from some person interested in the estate. On the receipt of this application, steps are taken to ascertain the names of the legal representatives, and these being ascertained, an order is given to the agent of the regiment to which the soldier belonged to pay to such legal representatives the amount to the credit of the estate. As a rule, in our letter of advice, the names of the parties entitled to receive are fully stated.

The agents, on receipt of our authority, communicate with the party concerned, and send a form of receipt in duplicate, which has to be verified by a clergyman or some responsible local authority. The receipts are invariably negotiated through a banker, and are eventually furnished to this office by the agent, in support of the charge which is made in their quarterly accounts.

India.—The paymaster of each regiment of cavalry or infantry and the officer commanding each battery of artillery serving in India render to this office a statement, monthly, of all casualties, including those by death. In those cases in which the non-effective accounts of the deceased officer or soldier is made up, the amount realised to the credit of the estate is given, and the course pursued with regard to the recovery of the aggregate amount from the India Office is identical with that followed in the case of remittances. The action taken in this office on the receipt of the monthly casualty returns is the same as that followed with regard to the non-effective accounts of soldiers serving at Home and in the Colonies. The agents merely act as the banker paying in our defined authority to the parties entitled to receive.

From the foregoing it clearly appears to us that the duties performed by the agents are those of payment only, and, as a rule, it would entail no further trouble on this office to make out the order of payment on one of our own paymasters or accountants, stationed at almost every important town in the United Kingdom (*see* Appendix A), than is involved by issuing instructions to the agents. We further consider that, as must be the case, payments will have to be made at places at which no War Office accountant is stationed; arrangements could be made by which a form of draft could be introduced, negotiable through a banker, equally available as that now used by the regimental agent.

Failing this, the Post Office money-order system could be utilised.

We consider, therefore, that so far as the payments of the effects of soldiers is concerned

concerned the agents might be relieved of the duty, it being undertaken by this office; but with regard to the payment of the effects of deceased officers, as the agents will continue to issue the pay, the order of payment for the effects might continue to be sent to them.

The question may arise, seeing that we have recommended that the remittances from soldiers serving in India should be paid by the India Office, why the same course should not be followed with regard to the payment of effects of soldiers dying in India? We would observe that the 11th clause of the Regimental Debts Act of 1863 places the responsibility of the distribution on the Secretary of State for War, and, until it be deemed expedient to amend the Act, the distribution must be so made.

During the year 1869-70 the agents made the following number of payments on account of effects:—

	Home.	Colonies.	India.	Total Amount Paid.
				£.
Cavalry - - - - - -	72	- -	179	1,194
Infantry - - - - - -	295	266	1,598	16,987
Artillery and Engineers - -	435	338	2,318	7,059

V.—*State the Advantages, or otherwise, of separate Agents for Regiments serving in Ireland.*

We fail to realise any advantage which accrues, either to this department or to the officers, by the appointment of separate agents for regiments serving in Ireland. In the evidence given by the late Mr. Croomes before the Committee on Army and Ordnance Expenditure in 1850, he stated that he did not see the necessity of Irish agents; they led to complications, and were merely a remnant of the old Irish War Office, on abolition of which the Irish agents were not done away with.

We apprehend no difficulty in placing paymasters in funds for the payment of non-commissioned officers and men direct from this office. This course is already followed, without the slightest inconvenience or delay, with regard to the Artillery and Engineers, and the regimental paymasters already furnish their estimates to this office, upon which the advances are made to the agents. Our facilities for payments in Ireland are, if possible, greater than they are in Great Britain, the Bank of Ireland having branches in almost every town of importance.

With regard to the officers, we cannot see that the Irish agent is of much assistance to them. They can always draw upon the English agent for their pay, or they can draw it direct from the regimental paymaster.

The complication of accounts and correspondence now involved by the present system is very considerable. The movements of regiments to and from Ireland are frequent, and each movement causes the opening and closing of a separate account in the books of this office. Separate accounts have to be rendered by the English and Irish agents for broken periods of a quarter. A further complication of accounts has taken place since the 1st April last, from which date the two companies of regiments serving in India and in the Colonies (formerly grouped into depôt battalions), are now attached to regiments serving in Great Britain and Ireland. If they are attached to a regiment serving in Ireland, the Irish agent claims the advantages accruing from the payment of the two companies, and hence a double set of accounts and estimates are necessary, one set from the English agent, who pays the colonel of the regiment and other officers not belonging to the two companies referred to, as also the remittances and effects, and another set from the Irish agent who issues the pay of the officers of the two companies, which may be affiliated to a regiment in the payment of the Irish agent.

VI.—*State whether it is desirable to continue the present practice of allowing General Officers appointed to the Colonelcy of Regiments to appoint their own Agents; and if any alteration is recommended, state in what manner it is suggested that the appointments should be made, or what course should be followed.*

The following extracts from the War Office Regulations, 1848 (Explanatory Directions), show the manner in which regimental agents are appointed, and the responsibility of the colonels of regiments by whom they are appointed;—

"1. The agent of a regiment is appointed by the colonel, who upon receiving the notification of his own appointment to the command of the regiment, should immediately report to the Secretary at War the names of the parties whom he has appointed his agents in Great Britain and Ireland respectively; and in the event of the death or failure of the agent first nominated by the colonel, he should immediately report the circumstance to the Secretary at War, and state the name of the person whom he shall have appointed to succeed such agent.

"2. The colonel of a regiment is accountable, in the event of any default on the part of his agent, for the pay of his regiment, for the regimental funds, and for other money with which the agent is usually entrusted; and he is responsible also for every obstruction and inconvenience which may arise to Her Majesty's service from the death or failure of his agent; and the colonel ought, therefore, to require sufficient security from his agent."

Prior to the issue of the Royal Warrant of the 21st June 1855, the remuneration to colonels of regiments consisted of a fixed annual allowance, and the profits accruing from an allowance granted to them for the supply of clothing, accoutrements, and appointments. These allowances were styled "off-reckonings," and the balance in favour of the colonel amounted to about 600 *l.* per annum for a regiment of infantry. The duties performed by the agent on behalf of the colonel in regard to the clothing, &c., of the regiment, are thus described by Mr. C. Hammersley in his evidence before the Committee on Army and Ordnance Expenditure:—

"For the colonel we manage the whole of the clothing affairs. We receive "returns from the regiment of the clothing that is required, and the accoutre-"ments that are required, and upon these we give the necessary orders to the "tradesmen; and we receive also nominal returns at the end of the year, giving "a list of the men, with every article of clothing that they have received, so "that we have the means of ascertaining precisely what every individual soldier "has received. When from any circumstance they do not receive their regular "clothing, they are entitled to a compensation which we undertake to pay "them."

It will be thus seen that so long as the colonel furnished the regiment with clothing, &c., he had a *direct* interest in the appointment of his agent, as upon his judicious management of clothing business the profits on the "off-reckonings," to a great extent depended.

On the promulgation of the Royal Warrant of 21st June 1855, this direct interest ceased, for the colonel, instead of receiving the off-reckoning, was relieved of all the responsibilities in regard to clothing, &c., and a fixed annual allowance was granted in lieu of the profits which had hitherto been realised.

It may be here observed that when the colonel no longer supplied the clothing, &c., the agent was relieved of a large amount of business, without relinquishing any portion of his emoluments, a fact which must not be lost sight of in considering the rate of remuneration which should in future be granted to him for such duties as he may be called upon to perform on behalf of the public.

So far, therefore, as the colonel of the regiment is concerned, we fail to see that he realises any direct advantage by the appointment of his agent. On the other hand, however, this department would, in the event of the failure of the agent,

agent, fall back upon the colonel to make good any balance which might be due to the public on the close of the agent's account.

Failures of regimental agents have, however, been exceedingly infrequent. The last recorded was in the year 1830, the loss to the public being about 100 *l.* only. The question, therefore, is whether this department is prepared to take upon itself the responsibility which now devolves upon the colonel of the regiment should the Secretary of State take the appointment of agents into his own hands.

We consider it would be advisable to do so, as the inconvenience of adjusting the accounts on the death or transfer of the colonels from one regiment to another is very considerable; and, moreover, we are of opinion that were the Secretary of State to make the appointments it might eventually lead to an extension of the system which has worked satisfactorily in regard to the agency of the artillery and engineers.

Should, however, it be deemed unadvisable to make any alteration at present, we would then suggest that the colonels to be appointed to regiments should in future restrict their nomination of an agent to one of the existing firms, or gentlemen who are now on the list of regimental agents.

VII.—*In any alterations that may be suggested an endeavour should be made to secure the Officers, particularly those of the Junior ranks, from any inconvenience which might be incurred by them were they deprived of the advantages they now derive from the Agents.*

As we have recommended that officers of all ranks should still have the option of drawing their pay through the agent or the regimental paymaster, we reserve to them all the advantages they have hitherto received.

VIII.—*In the event of a suggestion being made to re-adjust the Duties now performed by the Agents, it should be stated what is considered would be a fair remuneration to the Agents for the Duties they may be called upon to perform.*

If the recommendations we have made be adopted, the duties of the regimental agents would be limited to the issue of the pay of such officers who may elect to receive it through them in preference to the regimental paymaster, and the question now for consideration is what would be a fair rate of remuneration for the service; but before going into the question it may be advisable to state what rates are now granted to the agent, and what are the extent of their transactions; they are as under:—

1st. *Emoluments.*

A daily allowance of 1 *s.* per troop of cavalry, if the establishment of the regiment shall consist of 600 rank and file or upwards, and of 11 *d.* per troop if below that establishment.

A daily allowance of 6 *d.* for each company of infantry borne upon the establishment of the regiment.

A yearly allowance of 1½ *d.* in the 1 *l.*, or 12 *s.* 6 *d.* per cent. upon the aggregate amount of the daily pay, and daily and annual allowances actually issued through the agent.

An allowance of 10 *l.* per annum for each regiment of cavalry or infantry for postage and stationery.

The average amount received by the agents, under these terms, is as under:—

			£.	
Cavalry, if stationed at		Home - - -	280	per annum.
,,	,,	India - - -	160	,,
Infantry	,,	Home - - -	220	,,
,,	,,	Colonies - -	160	,,
,,	,,	India - - -	135	,,

The returns shown in Appendix B. to this Report, which have been carefully compiled from the actual accounts rendered by the agents on account of the year 1869-70, show:—

a. The amount paid for agency, for cavalry, infantry, artillery, and engineers.

b. The extent of the transactions undertaken by the agents on behalf of the public.

It will be seen from these returns that the amount paid for the agency of the Royal Artillery and Royal Engineers is 4,500 *l.* for the year 1869-70, in explanation of which we would observe that from 1st October 1858, Messrs. Cox & Co. acted as paymasters to these corps, and received a remuneration of 3 *d.* in the 1 *l.* on all their disbursements; for this they performed the usual duty of agents to the officers, and conducted the entire financial arrangements of the corps, rendering direct to the officer complete sets of accounts. On the appointment of paymasters to the artillery and engineers they relinquished their duty as paymasters, retaining that of agent only, for which they were in the first instance allowed a remuneration of 19 *s.* 6 *d.* per cent. upon the pay of officers of Royal Artillery per establishment, including those of the old brigades serving in India, the pay of these being calculated at their British rates. They were also granted the same per centage on the pay and extra pay of officers of Royal Engineers, together with 1,000 *l.* per annum for the payment of remittances and effects, and to cover cost of postage and stationery. This arrangement continued until 31st March 1863, when, on the amalgamation of the Indian with the Royal Artillery, they were granted a fixed annual sum of 4,800 *l.* per annum in full discharge of all the duties they had hitherto performed. This rate was continued until 31st March 1865, when it was reduced to 4,500 *l.* per annum, and has been annually revised. It will continue at this sum until the end of the current financial year.

As the time has now arrived for considering the amount to be granted for the ensuing year, it may be stated, as will be seen from the returns already referred to (Appendix B.), that the total amount disbursed by Messrs. Cox & Co. on account of the pay of Royal Artillery and Royal Engineers was, in the year 1869-70, about 410,000 *l.*; but as they have, since 1st April last, been relieved of the issue of the furlough pay of officers in this country on leave from India, which amounts on the average to about 50,000 *l.* per annum; and further, as it is proposed to relieve them of the payment of the remittances and effects, we consider that from 1st April next a rate of 1 per cent. on their actual disbursements on account of the pay of the officers of the Royal Artillery, and on the pay and extra pay of the Royal Engineers, would be a liberal remuneration for the service they will be called upon to perform on behalf of the public. This rate should include all expenses for postage and stationery; but in regard to the latter, such printed forms as may be required for the accounts rendered to this office should be furnished without charge. Under this arrangement the probable amount to be received will be about 3,500 *l.*

In regard to the emoluments to be granted to agents of regiments of cavalry or infantry now in their payment, we consider that as they will cease to draw the poundage they would be fairly remunerated were they granted 8 *d.* per troop or company per diem in full of all other emoluments, including the allowance for postage and stationery; this would give for a regiment of cavalry, consisting of eight troops, 97 *l.* 6 *s.* 8 *d.* per annum, and for a regiment of infantry, consisting of 10 companies, 121 *l.* 13 *s.* 4 *d.* per annum; we recommend these rates upon the ground that the agents have been compelled to keep up office establishments commensurate with the duties imposed upon them; and although these duties will, as proposed, be considerably reduced, we consider that the agents should be allowed time to make the necessary reductions in their establishments; we are of opinion, therefore, that this difficulty can be met by reducing the allowance of 8 *d.* per troop or company to 6 *d.* for all regiments which may become vacant on or after the 1st April next.

Were these arrangements carried out, the following would be the financial result for the ensuing year 1871-72:—

ESTIMATED

ESTIMATED Amount to be paid for Agency for the Cavalry and Infantry for the Year 1871–72, at the rates shown in pp. 8 and 9 of the Report.

	Cavalry.	Infantry.
	£.	£.
Troop or company allowance - - - -	3,746	12,866
1½ *d* in the £. on pay of officers - - -	868	3,706
„ on advances to paymasters - -	1,400	5,200
Postage and stationery - - - - -	280	1,410
TOTAL - - -	6,294	23,182
	29,476	

Under the proposed arrangements the cost will be—

	Cavalry.	Infantry.
	£.	£.
8 *d.* per troop on 224 troops - - -	2,725	—
8 *d.* per company on 1,410 companies - -	- -	17,155
	19,880	

This shows an immediate saving of 9,596 *l.* per annum, which would, provided the present regimental establishments remain undisturbed, be increased year by year until it eventually reaches 14,566 *l.*, from which, however, would have to be abated a trifling allowance in certain exceptional cases for cashing paymasters' drafts.

The two West India regiments should be placed on the same footing, by which an immediate saving of about 65 *l.* would be effected.

IX.—A General Report should be made on the subject of Agency, and such observations and suggestions offered as have arisen from a full consideration of the subject.

We would in conclusion observe that in regard to the general question of agency, it appears to us that should the pay of officers be at any time revised, the opportunity should not be lost of including in such revision an equivalent for the advantages the officers now derive from the agents; and thus regimental officers might be placed on the same footing, as regards agency, as staff and departmental officers, *i.e.*, their pay should be issued by the paymaster of the regiment in which they are serving, and the intervention of the agent entirely abolished.

The recent lamented death of Sir John Kirkland, who has for many years so ably performed the duties of general agent, renders it necessary that some arrangement should be at once made for the payment of those services which have been intrusted to him; these may be broadly stated as under:—

a. Advances to paymasters of recruiting districts, depôt battalions, and discharge depôts.

b. Pay of officers of the medical staff.

c. Miscellaneous payments.

d. Agent of the Ceylon Rifles and Malta Fencible Artillery.

In regard to (*a.*) we propose that arrangements should be at once made by which the paymasters concerned will be placed in funds direct from this office.

(*b.*) With reference to the pay of the officers of the medical staff, we consider that they should be paid by the control paymaster of the district in which they are serving, as is done with the officers at stations in the colonies.

(*c.*) Arrangements must be at once made for the payment of the miscellaneous services; we have, therefore, submitted a memorandum on the subject, which, if approved, would in our opinion place this part of the business on a satisfactory footing. It is to appoint one of the most experienced of the reduced depôt battalion paymasters as a second paymaster in the London district, assigning to him duties which we have particularised in our memorandum. The expense of this arrangement would be inconsiderable compared with the saving of 1,350 *l.* per annum, which has hitherto been paid to the general agent.

(*d.*) No direct charge has been made for the agency of these regiments, excepting an allowance of 10 *l.* per annum for postage and stationery. The Malta Fencibles would not appear to require an agent in this country, as the officers are paid locally, but the Ceylon Rifles should, in our opinion, be put on the same footing with the infantry of the line, and an agent appointed with an allowance of 6 *d.* per company per diem; there being no colonel to this regiment, the Secretary of State would have to appoint.

In regard to the payment of the Household Cavalry and Foot Guards, it may be observed that there are no Regimental Paymasters attached to these regiments. The agents, in addition to their ordinary duties as such, render the pay lists for the pay of the non-commissioned officers and men, thus perpetuating a system which appears to have been in force for the entire army prior to the appointment of Paymasters in the year 1797. We append a statement (Appendix C.) showing the cost of the present arrangement, and we would only observe that, in our opinion, the time has arrived for a full enquiry into the advantages or otherwise of the system, as also into the working of the stock purse fund. We therefore abstain from making any suggestions in regard to the question of agency in respect to these regiments.

See Appendix.

The only further question which now occurs to us, is that relating to the agency of militia regiments. So long as these remain disembodied no agent is appointed. The sums required for the pay of the permanent staff, and, during training, for the pay of the men, are advanced direct from this office to the Adjutants; but when they are embodied the 42nd Clause of the Act Geo. III., cap. 90, Clause cxx., comes into force, under which the "Colonel of the regiment may and *shall* appoint an agent." When the militia were embodied during the Russian war, agents were so appointed, and the emoluments granted to them were at the rates fixed for regiments of the line. It appears to us that the first opportunity should be taken to withdraw from the colonels of the regiments the power to appoint; this might be done by a short clause in the next Militia Pay and Clothing Act, and the Secretary of State empowered to make such arrangements in regard to agency as he may deem advisable.

On the general question of army agency we would refer to the evidence given before the Select Committee on Army and Ordnance Expenditure in 1850, and the valuable and exhaustive Reports which were submitted by Sir Charles Trevelyan, Sir W. G. Anderson, Sir R. C. Kirby, and others; we would refer also to the Reports and discussions which will be found in the Office Papers, as follows:—

1863 $\frac{5001}{12}$ Discussion relative to the allowance for agency received by Sir John Kirkland for Depôt Battalions. Lord de Grey decides that "Sir John Kirkland should "continue to receive his allowance during his tenure of appointment, but the "matter should be reconsidered *on his retirement or decease.*"

1868 $\frac{48a}{1466}$ and 1865 $\frac{1129}{1601}$ 1870 Report on the amount paid to Cox & Co. for agency of the Artillery and Engineers for several years, and discussion regarding Treasury sanction for the annual amount of 4,500 *l.*

1863 $\frac{48a}{995}$ Re-arrangement of agency allowance to Cox & Co., consequent on the amalgamation of Royal and Indian Artillery and Engineers.

Cox

Cox & Co, require a re-consideration of their position as agents of Royal Artillery and Royal Engineers consequent on the re-organization of these forces.	1859 1859	48a / 172 48a / 237
Report from Treasury on the subject of agency, holding that the double action of Paymasters and Agents should not exist.	1857	30 / Gen. No. / 15
Minute by Lord Panmure, having particular reference to the agency of Artillery Corps.	1857	30 / Gen. No. / 7
Discussions on the general question of the abolition of agency.	1858	D. G. S. / Gen. No. / 50 and 100

The following is a summary of the recommendations contained in this Report.

I. All advances to regimental paymasters serving at home should be made direct from this office without the intervention of the agent.

II. Officers should continue, for the present, to have the option of drawing their pay through the agent or regimental paymaster.

III. The agent should be relieved of the payment of remittances; those from regiments serving in India should be eventually paid by the India Office, and those from regiments serving in the Colonies should be made by this Office by order on a local accountant or otherwise.

IV. The agents should be relieved of the payment of the effects of deceased soldiers, which should be made by the officer direct; they should, however, continue to pay the effects of deceased officers.

V. Separate agents for regiments serving in Ireland should be eventually abolished.

VI. Colonels of regiments should not in future be allowed to nominate their own agents.

VII. The agents for the Artillery and Engineers should, from 1st April next, be remunerated by a charge of 1 per cent. on the pay and extra-pay actually issued by them.

VIII. The agency for regiments of cavalry and infantry of the line should be fixed at 8 *d.* per troop or company, in lieu of all other allowances; for regiments now in the pay of agents, to be reduced to 6 *d.* per troop or company for all regiments which may become vacant on and after 1st April next.

IX. The agent of the Ceylon Rifles to be allowed 6 *d.* per company per diem from 1st April 1871.

X. The appointment of general agent should be discontinued.

XI. An enquiry should be instituted into the present mode of paying the Household Troops.

XII. The power to appoint agents to militia regiments, when embodied, should be withdrawn from the colonels.

APPENDIX (A).

LIST OF STATIONS at which are Regimental Paymasters, Staff Officers of Pensioners, Adjutants of Militia Regiments, Adjutants of Volunteer Corps, Controllers, &c., Paymasters of Recruiting Districts, Paymasters of Depôt Battalions, Educational Establishments, Cashiers, &c.

10 January 1871.

STATIONS.	P. Regimental Paymasters.	C. Controllers, &c.	R. & D. Recruiting and Depôt Battalions.	S. Staff Officers of Pensioners.	A. Militia Adjutants.	V. Volunteer Adjutants.	Miscellaneous.
Aberdeen	P.	–	–	S.	A.	V.	
Aberystwith	–	–	–	–	A.	–	
Accrington	–	–	–	–	–	V.	
Airdrie	–	–	–	–	–	V.	
Alderney	–	Commissary	–	–	–	–	
Aldershot	P	C.	–	–	–	–	
Alloa	–	–	–	–	–	V.	
Alnwick	–	–	–	–	A.	V.	
Appleby	–	–	–	–	A.	–	
Ardwick	–	–	–	–	–	V.	
Armagh	–	–	–	S.	A.	–	
Ashton-under-Lyne	–	–	–	–	–	V.	
Athlone	–	–	–	S.	–	–	
Aylesbury	–	–	–	–	–	V.	
Ayr	–	–	–	–	A.	V.	
Bakewell	–	–	–	–	–	V.	
Bala	–	–	–	–	A.	–	
Ballina	–	–	–	–	A.	–	
Ballincollig	P.	–	–	–	–	–	
Balloch	–	–	–	–	–	V.	
Ballymena	–	–	–	S.	–	–	
Bandon	–	–	–	–	A.	–	
Banff	–	–	–	–	–	V.	
Barnard-Castle	–	–	–	–	A.	–	
Barnet	–	–	–	–	A.	–	
Barnstaple	–	–	–	–	–	V.	
Barrhead	–	–	–	–	–	V.	
Bath	–	–	–	S.	A.	V.	
Beaumaris	–	–	–	–	A.	–	
Bedford	–	–	–	–	A.	–	
Belfast	P.	–	–	S.	A.	–	
Berwick-on-Tweed	–	–	–	–	A.	–	
Beverley	–	–	–	–	A.	V	
Birkenhead	–	–	–	–	–	V.	
Birmingham	–	–	R.	S.	–	V.	Cashier.
Birnam	–	–	–	–	–	V.	
Birr	P.	–	–	S.	–	–	
Bishop Auckland	–	–	–	–	–	V.	
Blackburn	–	–	–	–	–	V.	
Blackheath	–	–	–	–	–	V.	
Bodmin	–	–	–	–	A.	V.	
Bolton	–	–	–	–	–	V.	
Boyle	–	–	–	–	A.	–	
Bradford	–	–	–	–	–	V.	
Brecon	–	–	–	–	A.	V.	
Brighton	P.	–	–	S.	–	V.	
Bristol	P.	–	R.	S.	–	V.	
Briton Ferry	–	–	–	–	–	V.	
Burnley	–	–	–	–	A.	–	
Bury (Lancashire)	P.	–	–	–	A.	V.	
Bury St. Edmunds	–	–	–	–	A.	–	
Buttevant	P.	–	–	–	–	–	

STATIONS.	P. Regimental Paymasters.	C. Controllers, &c.	R. & D. Recruiting and Depôt Battalions.	S. Staff Officers of Pensioners.	A. Militia Adjutants.	V. Volunteer Adjutants.	Miscellaneous.
Cahir	P.	–	–	–	–	–	
Cambridge	–	–	–	–	–	V.	
Campbelltown	–	–	–	–	A.	–	
Canterbury	P.	–	–	S.	A.	V.	
Cardiff	–	–	–	S.	A.	–	
Carlisle	–	–	–	S.	–	V.	
Carlow	–	–	–	S.	A.	–	
Carmarthen	–	–	–	–	A.	V.	
Carnarvon	–	–	–	–	A.	V.	
Carrick-on-Shannon	–	–	–	–	A.	–	
Carrickfergus	–	–	–	–	A.	–	
Cashel	–	–	–	–	A.	–	
Cavan	–	–	–	S.	A.	–	
Chatham	P.	C.	D.	S.	–	–	
Chester	P.	–	–	S.	A.	V.	
Chesterfield	–	–	–	–	A.	–	
Chester-le-Street	–	–	–	–	–	V.	
Chelmsford	–	–	–	–	A.	V.	
Chichester	–	–	D.	–	A.	–	
Chippenham	–	–	–	–	–	V.	
Cirencester	–	–	–	–	A.	–	
Clonmel	–	–	–	S.	A.	–	
Colchester	P.	C.	–	–	A.	–	
Congleton	–	–	–	–	–	V.	
Cork	P.	–	–	S.	A.	–	
Coventry	–	–	–	S.	–	V.	
Cranbrook	–	–	–	–	–	V.	
Croydon	–	–	–	–	–	V.	
Cupar	–	–	–	–	A.	V.	
Curragh	P.	–	–	–	–	–	Army Service.
Dalkeith	–	–	–	–	A.	V.	
Derby	–	–	–	S.	A.	V.	
Devizes	–	–	–	–	A.	–	
Devonport	P.	C.	R.	–	A.	V.	
Dewsbury	–	–	–	–	–	V.	
Dingwall	–	–	–	–	A.	V.	
Doncaster	–	–	–	–	A.	V.	
Dorchester	–	–	–	S.	A.	V.	
Dorking	–	–	–	–	–	V.	
Douglas	–	–	–	–	–	V.	
Dover	P.	C.	–	–	A.	V.	Educational and Army Service, and Hospital.
Dowlais	–	–	–	–	–	V.	
Dublin	P.	C.	R.	S.	A.	–	
Dumfries	–	–	–	–	A.	V.	
Dunbar	–	–	–	–	A.	–	
Dundalk	P.	–	–	–	A.	–	
Dundee	–	–	–	S.	–	V.	
Dungannon	–	–	–	–	A.	–	
Dunoon	–	–	–	–	–	V.	
Dunse	–	–	–	–	–	V.	
Durham	–	–	–	–	A.	–	
East Dereham	–	–	–	–	–	V.	
East Retford	–	–	–	–	–	V.	
Edinburgh	P.	C.	R.	S.	A.	V.	
Elgin	–	–	–	–	–	V.	
Ely	–	–	–	–	A.	–	
Enfield	–	–	–	–	–	–	Cashier.
Ennis	–	–	–	S.	A.	–	
Enniskillen	–	–	–	S.	A.	–	
Exeter	–	–	–	S.	A.	V.	
Falmouth	–	–	–	S.	A.	–	
Fermoy	–	–	–	–	–	–	
Forfar	–	–	–	–	–	V.	
Galway	–	–	–	S.	–	–	
Garston	–	–	–	–	–	V.	
Gateshead	–	–	–	–	–	V.	
Glasgow	P.	–	R.	S.	–	V.	
Gloucester	–	–	–	S.	A.	V.	
Golspie	–	–	–	–	–	V.	
Gosport	P.	–	–	–	A.	–	

STATIONS.	P. Regimental Paymasters.	C. Controllers, &c.	R. & D. Recruiting and Depôt Battalions.	S. Staff Officers of Pensioners.	A. Militia Adjutants.	V. Volunteer Adjutants.	Miscellaneous.
Grantham	–	–	–	–	A.	V.	
Gravesend	–	–	–	–	–	V.	
Greenock	–	–	–	–	–	V.	
Greenwich	–	–	–	S.	–	–	
Grimsby	–	–	–	–	–	V.	
Guernsey	–	Commissary.	–	–	–	–	
Guildford	–	–	–	–	A.	–	
Guisborough	–	–	–	–	–	V.	
Haddington	–	–	–	–	–	V.	
Hagley	–	–	–	–	–	V.	
Halifax	–	–	–	S.	A.	V.	
Hamilton	–	–	–	–	A.	V.	
Handsworth	–	–	–	–	–	V.	
Hartlepool	–	–	–	–	A.	–	
Hastings	–	–	–	–	–	V.	
Hatfield	–	–	–	–	A.	–	
Haverfordwest	–	–	–	–	A.	V.	
Hereford	–	–	–	–	A.	V.	
Hertford	–	–	–	–	–	V.	
High Wycombe	–	–	–	–	A.	–	
Hillsborough	–	–	–	–	A.	–	
Holyhead	–	–	–	–	–	V.	
Holywell	–	–	–	–	–	V.	
Horsham	–	–	–	–	–	V.	
Hounslow	P.	–	–	–	A.	V.	
Huddersfield	–	–	–	–	–	V.	
Hull	–	–	–	S.	–	V.	
Huntingdon	–	–	–	–	A.	–	
Hythe	–	–	–	–	–	–	School of Musketry.
Ilford	–	–	–	–	–	V.	
Inverness	–	–	R.	S.	A.	V.	
Ipswich	–	–	–	S.	A.	–	
Jarrow-on-Tyne	–	–	–	–	–	V.	
Jersey	P.	Commissary.	–	S.	–	–	
Keith	–	–	–	–	–	V.	
Kendal	–	–	–	–	–	V.	
Keswick	–	–	–	–	–	V.	
Kilkenny	–	–	–	S.	A.	–	
Kimbolton	–	–	–	–	–	V.	
Kingston (Surrey)	–	–	–	–	A.	V.	
Kinsale	P.	–	–	–	–	–	
Kirkwall	–	–	–	–	–	V.	
Knaresborough	–	–	–	–	A.	–	
Knutsford	–	–	–	–	–	V.	
Lanark	–	–	–	–	A.	V.	
Lancaster	–	–	–	–	A.	–	
Leamington	–	–	–	–	A.	–	
Leeds	P.	–	–	S.	A.	V.	
Leicester	–	–	–	S.	A.	V.	
Leith	–	–	–	–	–	V.	
Letterkenny	–	–	–	–	A.	–	
Lewes	–	–	–	–	A.	–	
Lichfield	–	–	–	–	A.	V.	
Lifford	–	–	–	–	A.	–	
Limerick	–	–	–	S.	A.	–	
Lincoln	–	–	–	–	A.	V.	
Linlithgow	–	–	–	–	–	V.	
Little Gaddesden	–	–	–	–	–	V.	
Liverpool	–	–	–	S.	A.	V.	
London	–	C.	R.	S.	A.	V.	Educational, Army Service, Hospital, Cashier.
Londonderry	–	–	–	S.	A.	–	
Longford	–	–	–	S.	A.	–	
Lowestoft	–	–	–	–	–	V.	
Lyndhurst	–	–	–	–	–	V.	
Lynn	–	–	–	S.	–	–	
Macclesfield	–	–	–	–	A.	–	
Macroom	–	–	–	–	A.	–	
Maidstone	P.	–	–	–	A.	V.	
Mallow	–	–	–	–	A.	–	

STATIONS.	P. Regimental Paymasters.	C. Controllers, &c.	R. and D. Recruiting and Depôt Battalions.	S. Staff Officers of Pensioners.	A. Militia Adjutants.	V. Volunteer Adjutants.	Miscellaneo
Malton	–	–	–	–	–	V.	
Manchester	P.	C.	R.	S.	–	V.	
March	–	–	–	–	–	V.	
Margam Tarbach	–	–	–	–	–	V.	
Maryborough	–	–	–	–	A.	–	
Melrose	–	–	–	–	–	V.	
Mold	–	–	–	–	A.	–	
Monaghan	–	–	–	–	A.	–	
Monmouth	–	–	–	–	A.	–	
Montrose	–	–	–	–	A.	V.	
Mullingar	P	–	–	–	A.	–	
Naas	–	–	–	–	A.	–	
Navan	–	–	–	–	A.	–	
Netley	–	–	–	–	–	–	Hospital.
Newark	–	–	–	–	A.	–	
Newbridge	P.	–	–	–	–	–	
Newcastle-on-Tyne	P.	–	–	S.	–	V.	
Newcastle-under-Lyne	–	–	–	S.	A.	–	
Newport (Isle of Wight)	–	–	–	–	A.	V.	
Newport (Monmouth)	–	–	–	–	–	V.	
Newry	P.	–	–	S.	–	–	
Newton Abbott	–	–	–	–	–	V.	
Newton Stewart	–	–	–	–	–	V.	
Newtownards	–	–	–	–	A.	–	
Northampton	–	–	–	S.	A.	V.	
Norwich	–	–	–	S.	A.	V.	
Nottingham	–	–	–	S.	–	V.	
Old Deer	–	–	–	–	–	V.	
Old Meldrum	–	–	–	–	–	V.	
Omagh	–	–	–	S.	A.	–	
Oxford	–	–	–	–	A.	V.	
Paisley	–	–	–	S.	–	V.	
Parkhurst	P.	–	–	–	–	–	
Parsonstown	–	–	–	–	A.	–	
Pembroke Dock	P.	–	–	–	–	–	
Penzance	–	–	–	–	–	V.	
Perth	–	–	–	S.	A.	V.	
Peterborough	–	–	R.	–	–	–	
Plaistow	–	–	–	–	–	V.	
Plymouth	P.	–	–	S.	A.	V.	
Pontefract	–	–	–	–	A.	–	
Pontypool	–	–	–	–	–	V.	
Portland	P.	–	–	–	–	–	
Portsmouth	P.	C.	R.	S.	–	V.	
Presteign	–	–	–	–	A.	–	
Preston	P.	–	–	S.	A.	V.	
Reading	–	–	–	–	A.	V.	
Renfrew	–	–	–	–	A.	–	
Richmond (Surrey)	–	–	–	–	A.	–	
Richmond (York)	–	–	–	–	A.	V.	
Rochdale	–	–	–	–	–	V.	
Rotherhithe	–	–	–	–	–	V.	
Rothesay	–	–	–	–		V.	
Ruabon	–	–	–	–	–	V.	
Saddleworth	–	–	–	–	–	V.	
St. Andrews	–	–	–	–	–	V.	
St. Helens	–	–	–	–	–	V.	
Salford	–	–	–	–	A.	V.	
Salisbury	–	–	–	–	–	V.	
Sandhurst	–	–	–	–	–	–	Educational.
Scarborough	–	–	–	–	A.	V.	
Seaham	–	–	–	–	–	V.	
Sevenoaks	–	–	–	–	–	V.	
Sheerness	P.	–	–	–	–	–	
Sheffield	P.	–	–	S.	–	V.	
Shorncliffe	P.	–	–	–	–	–	
Shrewsbury	–	–	–	S.	A.	V.	
Silvertown	–	–	–	–	–	V.	
Skipton-in-Craven	–	–	–	–	–	V.	

STATIONS.	P. Regimental Paymasters.	C. Controllers, &c.	R. and D. Recruiting and Depôt Battalions.	S. Staff Officers of Pensioners.	A. Militia Adjutants.	V. Volunteer Adjutants.	Miscellaneous.
Sligo	–	–	–	S.	A.	–	
Southampton	–	–	–	S.	–	–	
Stafford	–	–	–	–	A.	–	
Stirling	–	–	–	S.	A.	V.	
Stockport	–	–	–	–	–	V.	
Stockton-on-Tees	–	–	–	–	–	V.	
Stoke-upon-Trent	–	–	–	–	–	V.	
Stonehaven	–	–	–	–	–	V.	
Stratford	–	–	–	–	–	V.	
Sudbury	–	–	–	–	–	V.	
Sunderland	–	–	–	S.	–	V.	
Swansea	–	–	–	–	A.	V.	
Taunton	–	–	–	S.	A.	V.	
Templemore	P.	–	–	–	–	–	
Toddington	–	–	–	–	–	V.	
Tralee	–	–	–	S.	A.	–	
Trowbridge	–	–	–	S.	–	–	
Tullamore	–	–	–	S.	–	–	
Tynemouth	–	–	–	–	–	V.	
Ulverstone	–	–	–	–	–	V.	
Uxbridge	–	–	–	–	A.	–	
Walker	–	–	–	–	–	V.	
Walsall	–	–	–	–	–	V.	
Warley	P.	–	–	–	–	–	
Warrington	–	–	–	–	A.	V.	
Wakefield	–	–	–	–	–	V.	
Waterford	P.	–	–	S.	A.	–	
Warwick	–	–	–	–	A.	–	
Wells	–	–	–	–	–	V.	
Welshpool	–	–	–	–	A.	V.	
Westport	–	–	–	–	A.	–	
Wexford	–	–	–	–	A.	–	
Whitehaven	–	–	–	–	A.	–	
Wick	–	–	–	–	–	V.	
Wicklow	–	–	–	–	A.	–	
Winchester	P.	–	–	–	A.	V.	
Wolverhampton	–	–	–	–	–	V.	
Woodbridge	–	–	–	–	–	V.	
Woolwich	P.	C.	–	S.	–	V.	Cashier, Educational.
Worcester	–	–	–	S.	A.	V.	
Worthing	–	–	–	–	–	V.	
Wrexham	–	–	–	–	A.	–	
Yarmouth	–	–	–	–	A.	V.	
York	P.	–	R.	–	A.	V.	

APPENDIX (B).

TOTAL Amount paid for Agency, 1869–70.

	Annual Allowance per Company.	Poundage on Agents' Disbursements.	Poundage on Paymasters' Disbursements.	Postage and Stationery.	TOTAL.
	£.	£.	£.	£.	£.
Cavalry	3,746	1,113	1,414	280	6,553
Infantry	14,438	4,685	4,756	1,409	25,288
Artillery and Engineers	- -	- - -	- - -	- -	4,500
TOTAL £.	18,184	5,798	6,170	1,689	36,341

EXTENT of Agents' Transactions, 1869–70.

	Disbursements by Agents	Cash Advances.		Remittances.		Effects.	
		Drafts.	Amount.	Drafts.	Amount.	Drafts.	Amount.
	£.		£.		£.		£.
Cavalry - - -	198,698	2,493	272,485	1,029	11,947	251	1,194
Infantry - - -	864,759	7,524	861,415	7,006	66,257	2,159	16,987
Artillery and Engineers	455,372	- -	- -	2,345	38,354	681	7,059
TOTAL - - -	1,518,829	10,017	1,133,900	10,380	116,558	3,091	25,240

NUMBER of Officers per Establishment, 1869-70.

	On British Establishment.	Depôts, Home.	India.	TOTAL.
Cavalry - - - - - -	486	44	352	882
Infantry - - - - - -	3,466	312	2,028	5,806
Artillery - - - - - -	1,190	36	1,216	2,442
TOTAL - - -	5,142	392	3,596	9,130

APPENDIX (C.)

TOTAL Amount Paid for Agency, 1869–70.

	Annual Allowance per Company.	Poundage on Agents' Disbursements.	Postage and Stationery, and keeping Records.	TOTAL.
	£.	£.	£.	£.
Life and Horse Guards - - -	401	471	204	1,076
Foot Guards - - - - -	638	1,178	170	1,986
TOTAL - - - £.	1,039	1,649	374	3,062

EXTENT of Agents' Transactions, 1869–70.

	Disburements by Agents.	TOTAL.
	£.	£.
Life and Horse Guards - - -	100,441	100,441
Foot Guards - - - - -	264,459	264,459
TOTAL - - - £.	364,900	364,900

APPENDIX (D).

Agency, 1869–70.

	£.
Agency per Balance Sheet	41,051
Ditto Salary of General Agent	1,350
TOTAL per Balance Sheet	£. 42,401

	£.
Life and Horse Guards	1,076
Cavalry of the Line	6,553
Foot Guards	1,892
Infantry	25,288
Royal Artillery and Royal Engineers	4,500
Colonial Corps	640

	£.	£.
Sir J. KIRKLAND—		
Salary	1,350	
Charges in Depôt Accounts, March 1870	1,061	
		2,411
Prior years and fractions		41
TOTAL		£. 42,401

ARMY AGENCY.

COPY of OFFICIAL REPORT to the Secretary of State for War on the subject of ARMY AGENCY.

(*Mr. Bouverie.*)

Ordered, by The House of Commons, *to be Printed,* 28 *July* 1871.

391. *Under* 2 *oz.*

ARMY (REWARDS TO INVENTORS).

RETURN to an Address of the Honourable The House of Commons, dated 31 May 1870;—*for*,

"COPY of REPORTS and CORRESPONDENCE explanatory of ITEM C. (REWARDS to INVENTORS), in VOTE 15 of the ARMY ESTIMATES for 1870-71."

War Office, 31 May 1870.

EDWARD CARDWELL.

ARMY ESTIMATES, 1870-71.

VOTE 15 C.—REWARDS TO INVENTORS.

EXPLANATORY STATEMENT.

Item.	
1	Reward to Captain MONCRIEFF.—In fulfilment of the arrangement made in "Report of Committee" presented to Parliament 1869.
2	Reward to Mr. GUTHRIE.—Proceedings of Ordnance Council annexed, page 2.
3	Reward to Mr. GODDARD.—Proceedings of Ordnance Council annexed, page 2.
4	Reward to Mr. PARSONS.—Proceedings of Ordnance Council annexed, pages 11 and 33.
5	Reward to Commander COLOMB.—Correspondence between Admiralty, War Office, and Treasury annexed, page 54.
6	Bounty to Mr. SNIDER'S Representatives.—Correspondence between War Office and Treasury annexed, page 61.

MR. GUTHRIE'S CASE.

MEMORANDUM of PROCEEDINGS of a COMMITTEE assembled at the WAR OFFICE on the 7th July 1869.

PRESENT:

LORD NORTHBROOK, Under Secretary of State for War, President.
Major-General the Right Hon. Sir H. K. Storks, G.C.B., G.C.M.G., Controller-in-Chief.
Captain the Hon. J. C. Vivian, M.P., Lord of the Treasury.
Lieutenant-General Sir Hope Grant, G.C.B., Quartermaster-General.
Lieutenant-General Lord William Paulet, K.C.B., Adjutant-General.
Major-General Sir William Gordon, K.C.B., Inspector-General of Engineers.
Major-General Lefroy, R.A., Director-General of Ordnance.
Colonel Haliday, Inspector-General of Musketry.
Captain Hood, Royal Navy.
Lieutenant-Colonel Fletcher, Scots Fusilier Guards.
Lieutenant Lamb, Assistant Inspector of Stores for the India Office.
Colonel T. W. Milward, C.B., Royal Artillery, Secretary.

Mr. C. F. Guthrie's invention of an ingenious and efficient rolling bridge, applicable to defensive works.

The Committee resolved to recommend a grant of 100 *l.* being made to Mr. Guthrie.

MR. GODDARD'S CASE.

PROCEEDINGS of a COMMITTEE assembled at the WAR OFFICE, 8th May 1869.

PRESENT:

Lord NORTHBROOK, Parliamentary Under Secretary of State, President.
Major-General Sir H. Storks, C. C. B., C. C. M. G., Controller-in-Chief.
Captain the Hon. J. C. Vivian, M. P., Lord of the Treasury.
Major-General Lefroy, R. A., Director-General of Ordnance.
Rear-Admiral A. C. Key, C. B., Director-General of Naval Ordnance.
Major-General Gambier, C. B., Deputy Adjutant-General, R. A.
Colonel Jervois, C. B., R. E., Deputy Director of Works.
Captain Hood, R. N., Commanding H. M. S. "Excellent."
Colonel Milward, R. A., C. B., Secretary.

Colonel CAMPBELL, R. A., Superintendent of the Royal Gun Factories, appeared before the Committee.

SUBJECT:—*Petition of Samuel Aspinwall Goddard.*

Resolved,—THAT in consideration of all the circumstances of the case, a sum of 500 *l.* may properly be paid to Mr. S. A. Goddard.

Northbrook.

SCHEDULE OF PAPERS SUBMITTED.

Page.	Paper.	SUBJECT.
3	A.	Letter from Mr. Goddard enclosing copy of his Petition to the House of Commons.
7	B.	Mr. Galton's Précis of the case.

PAPER A.

LETTER from Mr. *Goddard* to Secretary of State for War.

Sir, Birmingham, 29 December 1868.

I RESPECTFULLY beg to enclose to you a copy of a petition which was presented to Parliament just before the close of the late Session by Mr. H. B. Sheridan on my behalf, and also copy of a circular letter which I addressed to many Members of the Parliament.

2. It was the intention of Mr. Sheridan, as I believe, to move that the petition be referred to a Committee; but at that juncture the Minister at War, Sir John Pakington, took the matter out of his hands, and requested Mr. Sheridan to see him on the subject. Mr. Sheridan had a short interview as a preliminary, when Sir John spoke very kindly, and inspired the belief that he would grant what was right and proper; but owing to the adjournment of Parliament at the moment, the retiring into the country by Sir John to recruit, the election coming on soon after occupying his time, soon followed by the resignation of the Ministry, he was unable to give to Mr. Sheridan another interview, and consequently no further progress was made in the business.

3. Under these circumstances I earnestly beg that you will read my petition, and take up the subject where Sir John left it, giving Mr. Sheridan an interview, and hearing him in relation to the case.

4. Every material allegation in the petition can be supported on oath; and it is to be hoped that you can hardly fail to agree with all those, without any exception, who understand my case, that it is a very hard one, and ought not to remain in its present state.

5. That I should have striven so many years to benefit the Government service, should have expended so much money, and really have accomplished so much, without obtaining any kind of reward or remuneration whatever, and especially as the Government has partially adopted my inventions, is a matter of surprise to all, and regarded as a hardship that ought not to be continued.

6. I have the honour of calling the Right Hon. Mr. Bright my friend, and also Mr. Dixon, the then other Member from this borough, and it may be asked why I did not get one of these to present my petition instead of Mr. Sheridan.

7. The reasons were these: I would not ask Mr. Bright to interfere in any war matters out of respect to his scruples, and Mr. Dixon, who had but just entered the House, was thought to be too young a Member to command the desirable attention, but he stood ready to support the petition when it should be presented by Mr. Sheridan, who had kindly taken it in hand.

8. As I have stated in the enclosed circular, were I a person of means I would gladly absolve the Government from any claim whatever, but it is not so. At the age of 72 I am striving by incessant application to support my family and pay my honest debts, and a refusal on the part of the Government to attend to my application would be a blow I could hardly stand up against: nevertheless, I only ask for justice, such justice as is due from man to man, and

I have, &c.

The Right Hon. the Secretary at War, (signed) *Samuel A. Goddard.*
War Office, Pall Mall, London.

Enclosure, No. 1, in Mr. *Goddard's* Letter, dated 29th December 1868.

App. 588. Mr. *Henry Brinsley Sheridan.* Sig. 1.

10,938. The Humble Petition of *Samuel Aspinwall Goddard,* Merchant and Gunmaker of *Birmingham,*

Showeth,

1. THAT, among the many improvements in the system of defence and offence in the art of war, a perfect mode of loading cannon at the breech had been for a considerable period regarded as highly desirable.

2. That knowing this fact, and that Her Majesty's Government, or persons high in

Her Majesty's councils, were desirous to have such a breech-loading cannon produced, your petitioner, about the year 1852, along with another since dead, invented a mode by which cannon might be loaded at the breech, and eventually produced one which was exhibited at Woolwich, and there tried by order of the Honourable the Secretary of War, under the inspection and direction of the Select Committee of the Honourable the Board of Ordnance.

3. That with the view of perfecting the invention, your Petitioner manufactured several cannon of similar construction to that shown, until, finally, after many trials at Woolwich and Shoeburyness before said Committee, he succeeded in producing one which appeared to have no fault.

4. That after this cannon, so perfected, had been tried satisfactorily at Woolwich, your Petitioner proposed to the honourable the Select Committee, as a final and conclusive test, that it should be taken to Shoeburyness and fired 500 times in succession, without sponging or cleaning, or any appliance whatever, except that of inserting a wet sponge at every tenth round.

5. That it was taken to Shoeburyness, General Cator the President, and Colonel W. H. Pickering the Secretary, and other members of the Select Committee attending, and that it was then and there loaded and fired 360 or 370 times successively without sponging or cleaning, and without any appliance whatever, not even the insertion of the wet sponge, as had been stipulated for.

6. That the reason why the firing was not continued beyond the numbers last named was, that all the ammunition provided by the employées of the Select Committee was expended, the last cartridge so provided having been used. That, on the conclusion of this trial, the cannon was in as perfect condition as at its commencement, no damage or evidence of wear or destruction of any kind existing; but, on the contrary, the breech-loading apparatus worked as smoothly and kindly at the finishing of the trial as at the beginning; and that on your Petitioner expressing to the President and members of the Select Committee the opinion that the cannon might be fired 1,000 times with a like result, no one dissented from it.

7. That these facts are in substance recorded in the Minutes of the Honourable the Select Committee, and your Petitioner respectfully represents that what is once accomplished in mechanics remains a fixed fact, and can never be undone; and your Petitioner avers that this cannon has met and satisfied the essential requirements of a breech-loading cannon, and that the qualities which it possesses are permanent and not transitory, and may be copied and extended to other cannon indefinitely.

8. That General Cator, on the conclusion of the trial referred to, declared that "the "cannon worked well," that neither he nor the other members of the Committee then present, could see any fault in it, but that, "all that he and the Committee could do was "to commend it to the Government, which they would do." The report, with the result of this trial, is no doubt on file in the War Department.

9. That soon after this report was sent in, your Petitioner was instructed by the War Department to get up a 32-pr. upon a similar construction, which was done, and the cannon was delivered at Woolwich, where it was proved, with three several charges of 18, 18, and 20 pounds of powder and ball, after which it was taken to Shoeburyness and loaded and fired many times, several times with 56 lb. oblong shot, without any obstruction arising, and without exhibiting any defect. That this 32-pr. might have been loaded and fired several times a minute by three men, and that the smaller gun first named had been loaded and fired 12 times a minute by two men.

10. That this 32-pr. was mounted upon a carriage invented by your Petitioner and another, since dead, combining an inclined plane upon which the recoil took place, the force of which was retarded by strong india-rubber belts, which also drew it back into position, effecting the double object of preventing shock by recoil, and of placing the cannon in position, without the intervention of much, if any, manual labour, which plan of carriage, though it may not be brought literally into use, suggests valuable ideas to artillerists in Her Majesty's service, and these inventions have, as your Petitioner believes, been to some extent applied.

11. That about this time, when to all appearance your Petitioner had succeeded in meeting the wishes of Her Majesty's Government, Mr. Armstrong introduced at Woolwich his wrought-iron cannon, and in connection with it a mode of breech-loading, soon after which the 32-pr. produced by your Petitioner, which was still lying at Shoeburyness, was burst in the absence of your Petitioner, and without your Petitioner being informed that it was going to be tried, the cause of which bursting has never been learned by him. That the circumstance of its bursting in no respect militated against the breech-loading apparatus, as the rend did not commence at the breech where the mode of applying the apparatus might be supposed to weaken the cannon, but in advance of the trunnions, a part with which the breech-loading apparatus had no connection, which fact was at the time admitted by all cognizant of the circumstances with whom your Petitioner had any communication on the subject; the cannon, however, was of cast iron, and of bad quality.

12. That Mr. Armstrong's cannon was accepted, and that of your Petitioner put aside, the small one, which had been so successful, being placed in the Arsenal at Woolwich, where it remains at the present time.

13. That after a large number of Armstrong cannon had been manufactured, including,

ing, as your Petitioner was informed, 1,000 100-prs., either finished or in process of manufacture, and a very large sum of money had been expended; and after they had proved defective in service in China or Japan, as was reported, Her Majesty's Secretary of War desired your Petitioner to go to Woolwich and see if he could alter to his plan the 100-pr. Armstrong guns which were in preparation.

14. That your Petitioner did go to Woolwich, and found that his breech-loading cannon, which had been lying at Woolwich, had been got out and put in order, and examined by the Select Committee of the honourable Board of Ordnance, and your Petitioner humbly represents that the request of the Minister of War to your Petitioner to go to Woolwich and see if he could not alter the Armstrong gun to his plan, after such examination by the Select Committee had been made, was very conclusive evidence of its possessing substantial merits, and a very high compliment to his invention.

15. That, in examining the butts prepared for the Armstrong 100-prs., your Petitioner reported to the Select Committee that they could be finished on his plan, but would not be perfect guns, inasmuch as that they were in his opinion already weak where they should be strong, while the alteration would make them still weaker, but that there were at the Arsenal some 70-pr. butts of a construction well adapted to the object.

16. That the War Department accepted this report, and requested your Petitioner to provide working drawings, and to give such instructions to the superintendent at Woolwich as would enable him to get up a 70-pr. on the proposed model. That your Petitioner considered such request in the nature of a command, and did provide the drawings, and attended with his machinist at Woolwich on several occasions to give instructions for getting up the cannon, and to examine the execution of the work.

17. That this cannon was finished, and now lies at Woolwich, where it has been tried twice with 20 rounds each time, and that it worked perfectly well, with the exception that the breech-loading apparatus worked hard at about the twelfth round, owing to defective preparations for loading, which defect your Petitioner has had no opportunity to remedy, as no further trial has been allowed.

18. That the difficulties which presented themselves at the outset in the construction of breech-loading cannon were, first, a mode of closing the breech, and, secoud, a mode of preventing the escape of gas upon the discharge, both of which are completely overcome in the cannon produced by your Petitioner; the former accomplished by two wedges acting in connection and nearly simultaneously, and the latter by an action to compensate for the stretching or expanding of the iron upon a discharge, in proof of the importance of which your Petitioner has a written communication from the late Secretary of War, stating that the two inventions for effecting these objects were considered by the Department valuable.

19. That your Petitioner has devoted to this invention some portion of valuable time during a period of fourteen years; that he has expended a sum of money which, with interest, amounts to more than 5,000 *l.*; that he has placed in the possession of Her Majesty's Government most valuable inventions, and that he has had no expectation of profit or recompense from any other than Her Majesty's Government.

20. That towards this expenditure he has never received one single penny in any shape whatever, excepting that recently the War Department, after having repeatedly refused anything, has awarded to him the sum of 50 *l.* to pay the expense of furnishing drawings, and of travelling with his machinist to and from Woolwich to alter the Armstrong gun, thus admitting that the first refusals were wrong with respect to this part of the claim, and by inference that on further examination they may be found to be wrong with respect to the remainder of the claim.

21. That the War Department continuing to refuse to make your Petitioner any remuneration for the 5,000 *l.* he had expended in what might be called the service of the Government, or for the valuable time he had given to perfecting breech-loading cannon, he applied for remuneration for the use of his invention in a gun called the "wedge gun," which had been got up at Woolwich to supersede the Armstrong "hollow screw gun," whereupon the Minister of War desired your Petitioner to go to Woolwich and examine the said "wedge gun," in order to point out definitely wherein the inventions of your Petitioner had been appropriated. That your Petitioner did go to Woolwich and examine the "wedge gun," and found that the compensating bouche or gas check had been adopted without any change, and that the principle of the "double wedge" had also been adopted with modifications. That these, the main features in your Petitioner's cannon, were found to be the main features in the "double wedge gun," and that several minor contrivances in your Petitioner's cannon, had also been introduced into the "wedge gun" with modifications. That the peculiar characteristic of the Armstrong gun first introduced to the Government was the "hollow screw," while the peculiar characteristics of your Petitioner's cannon were the "double wedge and the compensating bouche"; and that, while the "wedge gun" entirely abandons the characteristics of the former, it fully adopts the *character* of the latter.

22. That your Petitioner, in order not to be deceived by his own judgment in examining the "wedge gun," took with him to Woolwich a machinist of great practical ability to inspect the gun, and to make a report thereon, and that the following is a true copy of the report so made, viz. :—

"I, John Huggins, of Birmingham, machinist, at the request of Samuel Aspinwall Goddard, owner and proprietor of the breech-loading gun now lying at Woolwich Arsenal,

Arsenal, and known by the name of the Church and Goddard gun, and of the inventions appertaining thereto, went to Woolwich to inspect the 64-pounder 'wedge gun,' permission having been obtained for that purpose, in order to ascertain in what respect, if any, it embraced the inventions comprised in the said Church and Goddard gun, and having carefully examined the said 64-pounder 'wedge gun,' make the following report, viz.:—

"1st. I find that the sliding bouche or ring in the Goddard gun is adopted in the 'wedge gun' without any modification, with the exception that the bevil on the front interior of the bouche is omitted, which bevil was not necessary to the invention, but was adopted simply as a precautionary measure to ensure the more certain action of the bouche.

"This mode of closing the breech, so as to prevent the escape of gas on a discharge of the gun, I consider a most valuable invention, and I know of no other mechanical mode by which this indispensable object can be accomplished.

"2nd. I find that the double wedge of the Goddard gun is applied to the 'wedge gun,' but in a modified form, and in my opinion in a greatly inferior form, inasmuch as that, amongst other disadvantages, its manipulation in the act of loading and firing would require double the time occupied by the Goddard gun in that performance; the principle, however, of the double wedge is fully adopted and applied.

"These two main features of the Church and Goddard gun, viz., the compensating bouche and the double wedge, constitute the main features of the 'wedge gun'; there are, however, some minor contrivances that are in effect the same as in the Church and Goddard gun, amongst which are the following, viz.:—

"1st. The mode of pinning in the wedges, to prevent their flying out upon the gun being discharged, is identical in principle, and was adopted in the Church and Goddard gun years before the 'wedge gun' was produced.

"2nd. The mode of starting the thick wedge by a hammer action is similar to that in the Church and Goddard gun, in which a pin moves in a slotted link, and gives the blow through a sharp jerk of the lever.

"3rd. The movable face of the thin wedge, in order that it may be replaced by a new one in the event of its becoming injured.

"The slotted link and movable face were not introduced into the 64-pounder Church and Goddard gun which was got up at the Woolwich Arsenal, because they had not been found indispensable in the trials of previous guns, and because they could be applied, if required, at a subsequent period with equal facility.

"With the improved ammunition, however, which occasions a greater impact upon the wedge or breech block than the spherical ball ammunition, these auxiliaries may be necessary.

"In witness whereof, and to the truth of the foregoing statements, to the best of my knowledge and belief, I hereby subscribe my name, this twenty-second day of August in the year 1867.

"JOHN HUGGINS."

"Personally appeared before me John Huggins, and declared to the foregoing.
Joseph Clarke, Solicitor,
15, Ann-street, Birmingham."

23. That the said Report has been sent to the Minister at War, who still declines to make your Petitioner any remuneration, either for his heavy expenditure or for the use of his invention, and which refusal your Petitioner humbly conceives to be highly unjust.

24. That your Petitioner respectfully submits that his attempt to supply Her Majesty's Government with a breech-loading cannon was as meritorious as the attempts of certain persons to supply breech-loading rifles, and that the determination of the Government to appropriate a sum of money to meet the expenses of the competitors in that object, whether successful or not, establishes a precedent in favour of your Petitioner's application to the War Department.

25. That, in the opinion of your Petitioner, the grounds for refusal by the War Department to make your Petitioner any compensation are these: first, that he has no legal claim; second, that much money has been expended over another breech-loading cannon with an unsatisfactory result; third, that there is no immediate necessity for a breech-loading cannon; and fourth, probably that his does not meet every requirement. With respect to the first, your Petitioner would humbly represent that claims in equity may be as strong as claims in law; with respect to the second and third, that your Petitioner should not suffer because other inventions have failed; that although there may be no immediate occasion for a perfect breech-loading cannon, yet that all the reasons in favour of a breech-loading cannon, which induced Her Majesty's Government to spend a large sum of money in producing them, still remain in full force, and that the time may come when the want of them will be urgent, perhaps indispensable; while with respect to the fourth, it may be said that if your Petitioner's gun is not perfect, it is either the first or second best that has been offered to Her Majesty's Government.

26. That if the long labour of your Petitioner, his large expenditure, and arduous services be not to some extent rewarded, it will be a serious discouragement to persons who might otherwise introduce valuable inventions for the use of Her Majesty's Government, and can hardly fail to be injurious to Her Majesty's service.

27. That were your Petitioner in a position to forego any claim upon Her Majesty's Government

Government for remuneration for his heavy expenditure, he would willingly do so however just his claim might appear to him.

28. Your Petitioner therefore humbly prays that your Honourable House will take the subject of his Petition into serious consideration; and that, if necessary, he may be summoned to give evidence in support of its allegations, and that your Honourable House will take such order in the matter as in the opinion of your Honourable House may seem fit.

And, as in duty bound, your Petitioner will ever pray.

Dated in Birmingham, this fifteenth day of January, in the year of our Lord one thousand eight hundred and sixty-eight.

Samuel Aspinwall Goddard.

Enclosure No. 2 in Mr. *Goddard's* Letter, dated 29th December 1868.

Sir, Birmingham, 20 June 1868.

I RESPECTFULLY beg to enclose copy of a Petition to the Honourable the House of Commons, which has been presented by Mr. H. B. Sheridan, who informs me that he proposes to call attention to it upon the House going into Committee of Supply, and I respectfully ask the favour of you to examine into its merits, and upon the subject being brought up, to give it such support as in your judgment you may deem fit.

2. I exerted myself for a series of years and at a large expense to provide Her Majesty's Government with what was considered a desideratum, a breech-loading cannon; with what success my Petition sets forth. That it has great merits has been fully acknowledged from time to time by the authorities. The War Department has refused to allow me any compensation, or even to pay my expenses in bringing out the cannon, or any portion of them, which I consider highly unjust, and a course that could not be pursued by one individual against another, and especially as the characteristics of my gun have been adopted and applied to the gun called the "wedge gun," which is an improvement upon the "hollow screw gun," for which Mr. Armstrong was knighted and rewarded. I am consequently constrained to appeal to the Honourable the House of Commons for that justice which every subject is entitled to, and I trust the propriety of the appeal and of this circular, which I have been recommended to send, will commend itself to your approbation.

3. I have stated in my Petition, that were I in a position to forego a claim on the Government, however just that claim might be, I would willingly do so, but that is not the case. I am above 70 years of age, with a family dependant on my current earnings for support, and remuneration for my expenditure, in what may literally be termed the Government service, is of vital importance to me.

I have, &c.
(signed) *Samuel A. Goddard.*

PAPER B.

PRECIS of the Case of Mr. *Goddard.*

ON 14th June 1855 the Select Committee recommended a 32-pr. breech-loading gun to be constructed on Goddard's plan at Government expense.

652 *l.* paid for this gun to Messrs. Watt, on an order from Messrs. Goddard.

Mr. Goddard on 14th September 1857, claimed 174 *l.* more on account of the 32-pounder, besides 1,909 *l.* for two boat guns supplied, and 18 *l.* 5 *s.* for shells. The claim was refused 14th November 1857, with the exception of 18 *l.* 5 *s.* for shells.

(The boat guns had not been ordered by the Department.)

The 32-pr. burst at first round on 13th April 1858.

On 19th July 1858 Goddard again urged his claim for 178 *l.* and interest on account of the 32-pr. and 1,909 *l.* for the boat guns, which was refused on 31st July.

On 12th August 1858 the Select Committee recommended that no further guns should be made on Goddard's plan.

A sum of 242 *l.* on account of the 32-pr. was paid to him in October 1858 (this was in addition to 652 *l.* already paid on that account, and 18 *l.* 5 *s.* for shells).

Mr. Goddard, on 3rd March 1859, renewed his claims, and asked for employment or reward.

(At that time he had an order for rifles.)

On 7th May 1859 Mr. Goddard applied regarding an invention of wads to prevent fouling in rifles, proposed in 1855, which was referred to Select Committee and reported favourably on, but objected to by the Commandant of the School of Musketry, and not adopted.

On 30th October 1861 Mr. Goddard proposed a breech-loading gun, and stated that he had introduced a breech-loading gun in 1855-56, and numerous inventions, and had only been paid the actual cost of the gun, and not his other expenses, which he laid at 3,000 *l.* He also alleged that breech-loading arrangements since introduced in the service embraced his plans.

On 18th November 1861 he alleged that the Armstrong 100-pr. breech-loader (wedge system) was similar in all essentials to what he proposed five years before, and requested to be allowed to examine it with his machinist.

On 5th December 1861 he asked for a contract for small arms and again alluded to his breech-loading arrangements.

On 24th December 1861 the Select Committee reported on Mr. Goddard's allegation as to Sir W. Armstrong's breech-loading arrangement for the 100-pr. gun being similar in its essential features to a gun submitted by Mr. Goddard five years before. Their general opinion was that the only part common to both was the double wedge.

The Secretary of State, on 21st January 1862, refused to allow him to examine the 100-pr. breech-loading gun of Sir W. Armstrong, but said, "That the new plan of breech-loading suggested by Sir W. Armstrong is "yet only in the stage of experiment, and that the Secretary of State, "when any plan is adopted, will carefully consider any rights existing in "your favour under the patents to which you have directed his attention."

On 18th January 1862 Mr. Goddard applied to be allowed to make a breech-loading gun at the public expense.

Messrs. Church and Goddard's patent was dated October 1852, and would therefore expire in 1865.

On 15th August 1863 Mr. Goddard wrote saying that Mr. Broadwell's system of breech-loading, then under trial at the Arsenal, was identical with the system which he and Mr. Church patented.

Upon this the Select Committee reported, 23rd September 1863: "The "Committee feel compelled to state that there is no doubt whatever that "Mr. Broadwell's system of breech-loading is so like Messrs. Church and "Goddard's in all its essential features as to preclude all further experi-"ments being made without acknowledging Messrs. Church and Goddard "as the inventors * * *;" adding—

"They recommend that these gentlemen be informed that although the "justice of their claim is fully admitted, the experience of this particular "system of breech-loading is not sufficiently favourable to render a further "trial desirable.

On 22nd October and 21st November 1863 Mr. Goddard again called attention to the excellence of his system.

Upon this the Select Committee reported on 27th January 1864—

"The Committee think there are reasons for supposing that this system of "closing the breech if successful would be more easily worked than the Arm-"strong vent-piece and breech-screw. The parts which have to resist the shock "of discharge might be made heavier and stronger than the Armstrong vent-"piece without inconvenience.

"As an original construction it would be less expensive. It appears to them "more likely to succeed than Mr. Westley Richards' proposed modification of "this gun. As compared with the Armstrong wedge system, which, however, "cannot be applied to existing screw 110-prs., it appears likely to possess equal "or greater strength, and greater simplicity of management. Under these cir-"cumstances the Committee now recommend a trial of it."

A trial was consequently ordered upon Mr. Goddard's drawings, and with permission for Mr. Goddard and his machinist to superintend.

On 7th April 1864 Mr. Goddard proposed to fit out a field gun on his plan, which was refused.

Mr. Goddard on 26th January 1865 again alluded to his claim of 3,000 *l.*, and requested that the 9-pr. gun sent to Woolwich in 1856 might be returned to him. He was told that he might have it, and the letter concluded—

"I am to add, that although Earl de Grey is willing to admit that much "credit

"credit is due to you for the production of the expanding gas ring, and for the "general ingenuity displayed in the double-wedge system, he cannot enter on "your claims to reward until the 70-pr. gun now in course of preparation has "been tried."

On 6th April 1865 he again brought forward his plan of lubrication for small arms.

On 26th February 1866, Mr. Goddard's gun and others being nearly ready, he and the other inventors were informed that "His Lordship wishes it to be "clearly understood that even in the event of the experiments now in course "of progress for testing your system of breech-loading proving satisfactory, it "is not probable that any steps will be taken for the introduction of another "breech-loading arm into the service."

The breech-loading gun on Mr. Goddard's plan ordered in 1865, was completed and reported on by O.S.C. on 27th July 1866 as follows:—

"The Committee are of opinion that the results of the trial of Mr. Goddard's "system of breech-loading as applied to the 70-pr. gun are so little encouraging "that they cannot recommend any further expenditure of the public money in "the direction suggested by the inventor."

* * * * *

"They recommend that Mr. Goddard be informed that there is no intention "to continue the trial of his breech-loading system, which, as far as it has been "tried, is certainly not a success, and that the subject must be considered as "closed for the present.

"Should circumstances arise hereafter to cause inquiry to be directed to "other methods of breech-closing than those now in the service, his system "will be re-considered."

On 10th August 1866 Mr. Goddard put forward a claim for reward in the following terms:—

"I have been pursuiug this subject for nearly 14 years; that I have been the "means of advancing directly and indirectly the science of breech-loading; "that I have invented the method of completely preventing the escape of gas, "which at the outset was regarded as almost the only difficulty, and that the "escape of gas cannot be prevented upon any other known principle; that I "have expended upon the invention during the 14 years above 3,000 *l.*, the "interest on which is above 1,500 *l.*, besides devoting much value (*sic*) time and "attention during that long period. I therefore now earnestly ask the War "Department to take these facts into consideration, inquiring into their truth "so far as may be deemed necessary, then taking the invention into "possession, and dealing with it hereafter as may be deemed best, to "grant to me such reimbursement and remuneration as justice may seem to "demand."

Upon this the Select Committee reported:—

"The War Department have derived no direct benefit from the fruits of Mr. "Goddard's labours, and although the Committee consider that he is justly "entitled to credit for the public motives which have no doubt influenced him "in devoting his time and ingenuity for so many years to the development of "an efficient system of breech-loading, they cannot admit that the circum-"stances connected with the consideration of his invention by the Govern-"ment give him any claim for the reimbursement of the whole or even a part "of the expenses he may have incurred in pursuing the subject.

"To admit such a claim would in the opinion of the Committee be incon-"venient on public grounds, as opening the door to other unsuccessful com "petitors, and they cannot recommend it.

"They are equally averse to allowing Mr. Goddard to renew any experi-"ments even at his own expense. Such a course could only be construed as "an act of encouragement, and would engender hopes which the Committee "are satisfied are never likely to be realised.

"The President and Colonel Younghusband do not concur in the above "opinion, but are in favour of some pecuniary remuneration to Mr. Goddard."

General Peel refused his claim to reimbursement. Appeals in September 1866 and November 1866 were refused, as was a petition to the Queen.

But on a subsequent letter, on 17th December 1866, he was awarded 50 *l.* for drawings and expenses of going to and from Woolwich with his machinist.

Mr. Goddard, in April 1867, made a renewed application, and on 11th May wrote offering to commute his claim for 1,000 *l.*

In July 1867 Mr. Goddard again applied as to the infringement of his patent by the Armstrong breech-loading gun. He was asked to specify particulars.

Upon his doing so (16th August 1867), his letter was sent to Sir W. Armstrong.

Sir W. Armstrong entered into the question, and stated, "I will now proceed to show that this specified modification is not the modification which "has been adopted by the Government for the 64-pr. guns.

"1. In the Church and Goddard gun the closing block is a *double wedge* "moving *as one piece* in a parallel slot, while in the Government plan a *single* "wedge is employed moving in a slot which has an inclined side for the wedge "to tighten upon. This single wedge is entirely detached from the other "'closing piece,' while in the patented plan the patentees expressly specify the "method of 'connecting them together.' In the Church and Goddard gun "the function of *both* closing pieces is the same, viz., to resist the charge. In "the Government gun there is only one piece with an inclined surface, viz., "the single wedge. The other piece is not a wedge, but a flat plate, and its "function is entirely different from the closing wedge, being merely for carrying "and inserting the tin cup used for stopping the gas. For this purpose this "cup plate moves in grooves, so as to guide it in the path necessary not only "for carrying the cup into the slot, but for protruding it into the gun. In the "Church and Goddard gun no cup was contemplated, and no guiding grooves "were provided, for no such office was to be performed.

"The cup plate, in fact, is different in function, different in form, and "different in being *disconnected* from the other 'filling piece.' It is, therefore, "in my opinion impossible to identify it with one of the 'filling pieces' with "'inclined surfaces' which compose the 'connected' compound closing block "in the Church and Goddard gun.

"2. In the Government pattern all the working parts are comprised within "the gun, while in the Church and Goddard arrangement they are to a great "extent external.

"3. In the Government plan the arrangement is such that the vent is in-"accessible for firing until the breech is properly closed, and the breech cannot "be opened until the vent is again rendered inaccessible. Nothing resembling "this is embraced in the Church and Goddard gun.

"4. In the Government pattern the wedge is started and moved by the "direct action of a running handle contained within the slot, while in the other "construction a lever external to the gun, but with a similar running action, "is used. * *"

On this Mr. Goddard was informed that he had no claim, on 13th September 1867.

On 19th September 1867, Mr. Goddard replied, sending an affidavit from a machinist, Mr. Huggins, which contained the following:

"1. I find that the sliding bouche or ring in the Goddard gun is adopted in "the 'wedge gun' without any modification, with the exception that the bevel "on the front interior of the bouche is omitted, which bevil was not necessary "to the invention, but was adopted simply as a precautionary measure to ensure "the more certain action of the bouche. This mode of closing the breech, so "as to prevent the escape of gas or a discharge of the gun, I consider a most "valuable invention, and I know of no other mechanical mode by which this "indispensable object can be accomplished.

"2. I find that the double wedge of the Goddard gun is applied to the "'wedge gun,' but in a modified form, and in my opinion in a greatly inferior "form, inasmuch as that, among other disadvaniages, its manipulation in the "act of loading and firing would require double the time occupied by the "Goddard gun; in that performance the principle, however, of the double "wedge is fully adopted and applied.

"These two main features in the Church and Goddard gun, viz., the com-"pensating bouche and the double wedge, constitute the main features of the "'wedge gun.' There are, however, some minor contrivances that are in "effect the same as in the Church and Goddard gun, amongst which are "the following, viz.:

"1. The

"1. The mode of pinning in the wedges to prevent their flying out upon "the gun being discharged is identical in principle, and was adopted in the "Church and Goddard gun years before the wedge gun was produced.

"2. The mode of striking the thick wedge by a hammer action is similar to "that in the Church and Goddard gun, in which a pin moves in a slotted link, "and gives the blow through a sharp jerk of the lever.

"3. The moveable face of the thin wedge, in order that it may be replaced by "a new one in the event of its becoming injured."

Mr. Goddard was told that the Secretary of State declined to alter the decision.

An application from Mr. Goddard on 24th September 1867 to leave the matter to a Committee of Patent Agents was also declined.

A further application on 8th October 1867, and another on 20th December 1867, were similarly refused.

In sending on this last application he stated his willingness "to accept of the "Government, for the sole right of the use of my invention, as exhibited in "my breech-loading cannon, the sum of 750 *l.*, the offer, if not accepted, "in no wise to prejudice my claim for the full cost of my expenses and "personal attention."

MR. PARSONS' CASE.

PROCEEDINGS of a COMMITTEE held at the WAR OFFICE on the 26 April 1869.

PRESENT:

Lord Northbrook, Under Secretary of State for War, President.

Lieut. General Sir Edward Lugard, G.C.B., Under Secretary of State for War.
Major General the Right Hon. Sir H. K. Storks, G.C.B., G.C.M.G., Controller in Chief.
Captain Vivian.
Major General J. H. Lefroy, R.A., Director General of Ordnance.
C. M. Clode, Esq., Solicitor to the War Department.
Colonel Milward, R.A., C.B., Secretary.

READ a letter from Mr. Parsons, dated 23rd April 1869.

Mr. Parsons stated his case to the Committee.

Mr. Anderson, superintendent of machinery, also appeared before the Committee.

QUESTION for consideration:—*Mr. Parsons' Case.*

Resolved,—

That there appears to be little similarity between the patent of Mr. Parsons in 1862, and the Palliser gun as manufactured in 1868, but there appears to be great similarity between the plan proposed by Mr. Parsons in 1860 and the Palliser gun.

That considering Mr. Parsons' claim that "his specification of 1860 has "been infringed by Major Palliser, that the novelty of his proposal con-"sisted in the application of a tube of more elastic material to a cast-iron "gun in a manner superior to anything before proposed, and so arranged "that the strain should be absorbed by the tube before it is transmitted "to the cast-iron," and that it is between his gun as proposed in 1860 and Major Palliser's as manufactured in 1868 that he claims similarity, the Committee recommend that the question as to the extent of the identity between the plan proposed by Mr. Parsons in 1860, and that upon which

guns were converted in 1868 on Major Palliser's system should be referred for opinion to competent authority, and that the decision be suspended until such report is received.

The Committee recommend that Mr. C. H. Gregory, President of the Institute of Civil Engineers, shall be referred to on the above point.

Northbrook.

SCHEDULE OF PAPERS.

Page.	Paper.	Subject.
12	A.	Correspondence with Mr. Parsons.
16	B.	Report of the O.S. Committee, No. 1,074, 5 Sept. 1860.
17	C.	- - - ditto - - - No. 1,816, 31 Aug. 1861.
18	D.	- - - ditto - - - No. 1,996, 4 Dec. 1861.
19	E.	- - - ditto - - - No. 3,055, 28 Oct. 1863.
20	F.	Extract from Proceedings of the O.S. Committee, Vol. 7, 1865, p. 113.
21	G.	Report of the O.S. Committee, No. 3,863, 14 Aug. 1865.
23	H.	- - - ditto - - - No. 6,232, 16 July 1866.
24	I.	- - - ditto - - - No. 4,860, 8 Jan. 1868.
25	J.	- - - ditto - - - No. 5,087, 18 Aug. 1868.
27	K.	- - - ditto - - - No. 5,170, 4 Nov. 1868.
31	L.	- - - ditto - - - No. 5,208, 7 Dec. 1868.
32	M.	Letter from Mr. Parsons to the Right Hon. E. Cardwell, M.P., Secretary of State for War.

Paper A.

Correspondence with Mr. *Parsons.*

Sir, War Office 14 May 1860.

In reply to your letters of the 7th and 10th instant, addressed to Mr. Sidney Herbert and Colonel St. George, I am directed by the Secretary of State for War to inform you that if you will forward to this office the particulars of your invention, any communication which you may thus make will be treated as confidential; and he will then be enabled to judge whether it is desirable that it should be entertained.

A circular, containing the rules observed by this Department with regard to inventors, is enclosed.

I am, &c.
(signed) *B. Hawes.*

Mr. Parsons, 9, Arthur Street, West,
London Bridge, E.C.

Enclosure in Letter, dated 14 May 1860, addressed to Mr. Parsons.

(Circular No. 491.)

Memorandum for Inventors.

War Office, 13 October 1859.

1. Misapprehension having frequently arisen as to the rules of the War Office with respect to inventions which are brought under its consideration, it is deemed expedient to apprise inventors that the Ordnance Select Committee has been appointed by Her Majesty's Principal Secretary of State for the War Department to examine and report upon all inventions or improvements relating to the implements or munitions of war which from time to time he may think proper to submit to the consideration of the Committee.

2. An

2. An investigation will be made by the Committee into the merits of any invention only upon the terms and conditions stated in this Memorandum, which terms and conditions must be held to be binding upon every inventor whose invention is submitted by him to the Committee.

3. The inventor must leave with the Secretary of the Committee a written description, model, or specification of his invention, and should it be thought desirable to subject it to experimental trial, he must, when required by the Secretary, deliver at Shoeburyness, or other place named to him, a specimen corresponding with the description.

4. The inventor will be required to state,—

I. The results intended to be attained by his invention.

II. The estimate cost of the invention or improvement in a state to be introduced into the service.

III. The sum which he requires, either—

1st. For the assignment of the invention or patent to the Secretary of State for the time being;

2nd. For a license, if patented, and afterwards for the manufacture and supply of the invention as finally approved.

5. The inventor must attend at his own expense any meetings of the Committee to which he may be summoned, and give all information and answer all questions then and there put to him by the Committee, for the purpose of illustrating or explaining his invention.

6. The inventor will bear all damage or injury that may arise to any of his specimens delivered to the Committee.

7. The Committee do not undertake to order a trial of any invention, unless the experiments are likely, in their judgment, to lead to beneficial results; nor do they undertake to order experiments, in any case, at the public cost. Before, however, any experiments are undertaken by the Committee, they will apprise the inventor of the time and place of doing so. The inventor will be permitted to be present at all experiments made at his cost.

8. In the event of the adoption into the service of the invention, the descriptions, drawings, or models which have been furnished by the inventor will be retained by the Ordnance Select Committee as the property of the Department.

9. In the event of rejection, drawings or models will be considered as the property of the inventor, and will be returned to him, on his making application for the same to the Secretary of the Ordnance Select Committee within two months after the date of the notification of the rejection of his proposal. The Committee will, however, have the option of retaining copies of the same for purposes of record. The period within which application for the return must be made will be extended, in the case of foreign inventors, according to circumstances.

10. The Secretary of State does not undertake to purchase, at the price named, or at any other price, any invention offered to him under the terms of this Memorandum.

(signed) *B. Hawes.*

No. 9, Arthur-street, London Bridge, E.C.,
22 May 1860.

Sir,

In accordance with the directions contained in your favour of the 14th instant, 80/P/61, I now have the pleasure to forward you a drawing and specification of the invention which I beg you to be so good as to submit to the Select Committee. I should have done this earlier, but not being aware until I had your letter of the requirements of the Committee, I had not the drawing and specification sufficiently prepared.

Drawing and Specification at Woolwich.

As regards the results expected to be derived from the invention, I need hardly state that they would be the same as those obtained from all rifled ordnance, viz., increased range, accuracy, and penetration

With respect to cost, it is impossible to form a correct estimate without further data, and the appliances available, but an inspection of the plan will show to any one acquainted with work of the kind that it will be exceedingly small in comparison with the cost of making new rifled guns, and much less than any of the plans that have lately been tried, in which external hoops are used; but I would go more fully into this question should the Committee think the plan deserving of a trial.

With respect to any reward to myself, I confess I have not once given it a thought, and it appears somewhat premature to discuss this question until the plan shows some probability of success; I hope, therefore, it will now be sufficient for me to state that my ideas on this point are not of an extravagant nature, and if I were fairly remunerated for the time I might devote to the matter, and any expenses I might incur, I should not look for much beyond.

Trusting, therefore, that these matters may be allowed to stand over for the present, and that the Committee will give my plan their favourable consideration,

I remain, &c.

Sir B. Hawes, K.C.B., (signed) *P. M. Parsons.*
Under Secretary of State for War.

P. S.—I hope you will excuse my mentioning that I wish to avail myself of the offer contained in your letter that this communication should be considered confidential.

Enclosure of Mr. Parsons' Letter, 22nd May 1860.

MINUTE 1251, 30th May 1860.

SPECIFICATION of the Plan for Strengthening and Rifling CAST-IRON GUNS to accompany Drawing by *P. M. Parsons.*

THE invention which I beg to submit for the consideration of the Select Committee embraces,—

Firstly. A mode of strengthening and rendering the ordinary cast-iron guns suitable for rifling, and discharging elongated projectiles.

Secondly. A mode of adapting such guns to load at the breech, which arrangement is applicable to other guns made in the first instance for rifled guns.

The method of strengthening consists in fitting to the cast-iron gun an internal tube of wrought iron, steel, homogeneous metal, or similar suitable material. This may be done simply by preparing a tube of this kind turned on the outside to fit the present bore of the gun accurately, and bored and rifled inside, and then forced into the gun by hydraulic pressure or otherwise, or the gun may be re-bored slightly taper and the tube made to correspond externally and then forced in.

If the gun is not intended to be used as a breech-loader, I should make the taper as shown in Fig. 1, that is tapering towards the breech; the tube is then simply forced in, it being prepared of such a size that the proper initial strain shall be put on it when in its proper position.

Should the gun be intended for a breech-loader, I recommend the construction shown in Fig. 2. In this the taper of the tube is the reverse way, which gives it a sufficient strength at the breech for the breech-loading arrangement, the tube is forced in from the breech end of the gun, which is bored slightly taper right through, and is secured by a strong nut at the muzzle.

The breech-loading arrangement is constructed as follows:—The breech of the gun A is partly cut away, and the internal tube B projects beyond it, and has a thread cut on it, a cap C which is screwed on to the end of the tube is provided with internal lugs *l, l, l, l,* shown in cross section at Fig. 3. The plug P, which crosses the breech, is provided with corresponding lugs *l′, l′, l′, l′,* shown in cross section at Fig. 4; the plug is inserted by passing it through the cap, the lugs on it passing through the spaces between the lugs on the cap; when in its place the key K is turned by means of the arms E, E, E, and lever L; this brings the lugs on the cap over the lugs on the plug when they both turn together, being constrained to do so by the stops on the key K, until the plug is sufficiently forced up by the cap being screwed on. To release the plug the lever is turned the reverse way, which unscrews the cap, and when the openings between the lugs on it correspond with the lugs on the plug, the key catches it also and carries them both round together; the plug is then drawn out and turned on one side swinging on the rod R by means of the link or arm M.

I will now proceed to furnish the calculations as to the strength of guns thus constructed, which lead me to believe that it will be next to impossible to burst them.

The drawing furnished represents two ordinary 68-pounders, and I have selected the largest size, as it is well known that the strength of large guns is less in proportion than smaller ones, and, therefore, if my system is successful with these, there can be no doubt of its applicability to smaller guns.

Taking the tensile strength of the cast-iron at 10 tons per square inch, and assuming that in consequence of the smaller amount of duty performed by the exterior portion at the time of the discharge, that the average strength is thereby reduced to 5 tons per square

square inch, and taking the strength of the wrought-iron tube at 20 tons per square inch, we have for the strength of the breech (taking that portion of it, say, up to the first band at *n*), as follows:

	Square in.		*Tons.*		*Tons.*
Area of cast iron - - - -	548	×	5	=	2,740
Area of wrought iron - - - -	86	×	20	=	1,720
					4,460 tons.

Now the longitudinal area of the chamber in which the powder is exploded, taking the length up to the same point at *n*, will be 5 in. × 18 = 90 square in. and $\frac{4460}{90} = 49{\cdot}5$ tons per square in., the pressure that would be requisite to burst the gun, this is nearly 3 times 17 tons, the pressure that gunpowder is supposed to exert when confined without escape.

In the breech-loader, taking a 1-inch length, we have,—

	In.		*In.*		*Square in.*		*Tons.*		*Tons.*
Area of cast iron - -	16	×	1	=	16	×	5	=	80
Area of wrought iron -	$4\frac{1}{2}$	×	1	=	4·5	×	20	=	90
									170 tons.

Area of 1 in. of chamber, diam. 5 in. × 1 = 5 square in. and $\frac{170}{5}$ tons = 34 tons per square inch, or just double the greatest pressure of confined gunpowder. I consider, however, in this case that the strength of the cast iron might fairly be taken higher; as more is taken from the interior of the gun, there would also be a slight addition to the strength both from the tube and the portion of the breech of the gun extending behind the face of the breech plug, which would probably bring the total strength to $2\frac{1}{2}$ times the greatest force of gunpowder, and if puddled steel or homogeneous metal were employed for the internal tube, the strength in both cases would be increased from 25 to 30 per cent. or even 50 per cent.

A little consideration will show that the system I propose is the correct one, and altogether more suited to the purpose than preserving the original bore of the gun and putting on hoops outside.

It is the interior of the gun that sustains the greatest shock; if this is of cast iron it is strained beyond its elastic limit before the strength of the hoops comes into play, but if the interior is wrought iron, steel, or homogeneous metal, it will stretch before breaking, but the stretching consumes a large portion of the force, and the remainder only is transmitted to the cast iron, and is imparted to it in a less sudden and more equable manner; the cast iron, in fact, has only to do surplus duty, and which in ordinary charges would amount to scarcely anything; then, again, the bore being reduced, there is less area for the explosive gases to act upon in the proportion of 5 to 8, which of itself alone increases the strength of the gun in that ratio, at the same time the bore is still sufficiently large to carry the same or a greater weight of projectile of an elongated form. For a 68-pounder, when altered, I propose an elongated projectile weighing about 80 lbs., so that although the bore is reduced, the weight of the projectile thrown by the guns, altered under my system, would be rather more than those at present used with them.

Another advantage would be the saving in expense both in material and workmanship, which would be much less on my plan than when external hoops are employed; greater facilities are also offered by it for accurate boring and rifling, and the steel or iron tube will stand a much greater amount of wear than the cast iron.

Another important feature in this system is that the longitudinal strength of the gun is not impaired as it is when the breech is turned down to receive external hoops; this cause of failure by the breech being blown off is therefore avoided.

There are many points of minor detail which would render this description too voluminous to specify, but these I have well considered, and I should be happy to enter into the matter more fully personally, and I doubt not be able to meet any objections that might be urged against the plan.

No. 9, Arthur Street, West,
London Bridge.

(signed) *P. M. Parsons,*
19 May 1860.

Reports of the Ordnance Select Committee.

Paper B.

Committee Minute, No. 2,043, 5/9/60.—Report, No. 1,074.

5 September 1860.

PRESENT:

Captain Sir W. Wiseman, Bart., R.N. | Colonel Greathead, C.B., H.P., Unatt.
Colonel Robinson, R.E. | Lieut. Colonel F. Campbell, R.A.

Colonel Lefroy, R.A., Secretary.

SUBJECT:—*Mr. Parsons' Method of Strengthening Cast-iron Ordnance.*

Remarks by the Committee.

Mr. Parsons proposes to introduce a tube or core of wrought iron or cast steel into any ordinary cast-iron smooth-bored gun, contracting its diameter to any calibre required for throwing elongated projectiles, and adding, in his opinion, to its strength sufficiently to allow of its being rifled.

The gun in his drawing corresponds nearly to a 68-pounder; it is represented as bored up to a calibre of 9·50 inches, the inner wrought-iron tube has a thickness of 2·25 inches, and the calibre of the gun thus strengthened internally is reduced to 5·0 inches. Its weight will at the same time be increased about 9 cwt., and the preponderance decreased about 1¾ cwt.

As far back as the year 1808, Major Constable, of the East India Company's Artillery, proposed to have guns cast "upon such a construction that the "interior cylinder shall be made of the best wrought-iron, and the outward "form of the gun of a coating of the usual gun-metal round it." This plan was tried on a light 3-pounder, whose endurance was tested in comparison with a brass 3-pounder of the service. The Committee reported that there was no perceptible difference between them in point of resistance. Two years later, viz., in 1810, Mr. English proposed the converse construction, viz., a brass cylinder in an iron gun, which does not appear to have been tried.

These proposals, although analogous to Mr. Parsons' in their design, have no mechanical resemblance to it, and are therefore only referred to as showing that the general idea of an internal tube of a different metal from the external tube is familiar. A brass 3-pounder was so prepared in the Royal Gun Factories in 1856.

Mr. Reveley, C.E., in January 1856, proposed to effect this combination by casting iron or brass round a spiral coil of steel (*see* Report, No. 491, 21st December 1859); and Mr. Hely, in September last, proposed to convert smooth-bore guns into rifled guns almost identically in the same way as is now proposed by Mr. Parsons, viz., "by lining the smooth-bored weapon with a smooth "surface tube of suitable dimensions internally grooved or rifled."

It was then stated by the Assistant Superintendent, Royal Gun Factories, that that subject had already engaged the attention of Sir William Armstrong to a considerable extent, but that the practical difficulties, and the expense of the method, had prevented any steps to realise it. (Report, No. 409, 28th November 1859.)

Mr. C. Burnett proposed a lining of cast steel in wrought-iron guns in January last, but not in a practical form, and no trial was recommended. (Report, No. 656, 27th February 1860, Min. 520, on War Office letter, dated 14th February 1860.)

On the present occasion, finding as the result of their inquiries that the system does not appear to have ever been actually tried, the Committee requested a precise

a precise estimate from the Royal Gun Factories for thus lining a 68-pounder and a 32-pounder, which is as follows :—

———	Value of Gun.	Expense of Lining it.	Expense of Rifling.	Probable Expense of Ammunition to test it to Destruction.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.
68-pounder -	95 – –	100 – –	18 17 –	65 16 –
32-pounder -	58 – –	70 – –	18 17 –	35 – 3

Looking to the variable strength of cast-iron guns, the Committee do not consider that a safe conclusion could be based on the trial of less than three, which if they were 32-pounders reduced to the calibre of the proposed Armstrong muzzle-loading 50-pounder, viz., 5·25 inches, would thus cost 137 *l.* 6 *s.*, and if they were 68-pounders reduced to the calibre of the proposed Armstrong muzzle-loading 80-pounder, viz., 6·5 inches, would cost 238 *l.* 12 *s.* 2 *d.* each.

Looking to the statement in Mr. Anderson's letter of November last, quoted above, and to the fact of proposals of a similar character having been so often made before, the Committee do not think it expedient or necessary, on grounds of justice, to connect this inquiry in any special manner with the proposals of Mr. Parsons; but they recommend that two cast-iron service guns, viz., a 32-pounder and a 68-pounder, be prepared for preliminary trial in the Royal Gun Factories, and that if they should succeed the number be extended to three of each calibre; the purport of this report being communicated to Mr. Parsons, that he may use his discretion as to the expediency of going to the expense of protecting his rights by a patent.

Mr. Parsons' method of breech-loading does not appear to the Committee to promise any advantages in facility of manipulation over that of Sir William Armstrong, and to be more liable to derangement; a little rust, or a slight bend in the carrying bar, such as might be occasioned by a blow, would be likely, in their opinion, to interfere materially with the freedom of working of the breech; this system, however, being especially contrived in reference to the interior tubing, it is not necessary to consider it, unless the future success of that plan should call for a change in the present system.

W. S. Wiseman.

Paper C.

Committee Minute, No. 4,764, 30/8/61,—Report. No. 1,816.

31 August 1861.

PRESENT:

Captain Sir W. Wiseman, Bt., R.N. | Lieut. Colonel F. Campbell, R.A.
Colonel Robinson, R.E. | Lieut. Colonel R. S. Baynes, Unatt.

Captain Heyman, Assistant Secretary.

Subject :—*Cast-iron Guns with internal lining.*

Remarks by the Committee.

With reference to W. O. letter of 27th August 1861, forwarding copy of letter from the Assistant Superintendent, Royal Gun Factories, 21/8/61.

The Committee have the honour to report that, in consequence of the difficulty experienced in lining with a wrought-iron tube the 32-pounder cast-iron service gun, as reported by the Assistant Superintendent, Royal Gun Factories, in his letter under acknowledgment, they will proceed at once to test to destruction

tion the 68-pounder gun which has been completed, and will report when the results have been ascertained whether they consider it desirable to test another gun strengthened in this manner.

W. S. Wiseman.

PAPER D.

Committee Minute, No. 5,482, 2/12/61.—Report, No. 1,996.

4 December 1861.

PRESENT:

Colonel St. George, C.B., R.A.
Captain Sir W. Wiseman, Bt., R.N.
Colonel Robinson, R.E.
Lieut. Colonel F. Campbell, R.A.
Lieut. Colonel R. S. Baynes, Unatt.

Colonel Lefroy, R.A., Secretary.

SUBJECT.—*Lining a Cast-iron 32-pounder with a wrought-iron tube. Bursting a 68-pounder lined with wrought-iron.*

REMARKS BY THE COMMITTEE.

With reference to W. O. Letter of 5th September 1861.

THE Committee have the honour to report that the 68-pounder gun experimental, No. 117, which was reduced in calibre to 6·5 inches by being lined throughout with wrought-iron, was tested to destruction in the first week of November, and burst on the 6th of the same month at the 71st round, with charge of 16 lbs., being the first round with a cylinder of 544 lbs., equal to eight 68-pounder shot. The cylinder was 1½ inch thick, and increased the weight of the gun from 95 cwt. 2 qrs. 14 lbs. to 101 cwt.

The tube was bored out of a solid forging, and the cast-iron, after being heated, was shrunk upon it. The tube gradually drew out at the muzzle up to the 50th round to the extent of 0·05 inch. A wire of true gauge would not pass from the cast-iron through the wrought-iron, showing that the copper bouche was bent by the shifting forward of the tube; the movement appeared, however, to be very slight.

The gun burst, as above stated, at the 71st round, having given no previous indications of failing. It is in an unusual number of pieces, and the fracture has extended through to the chace, leaving only the muzzle perfect The tube split longitudinally. On examining it a number of small fissures are visible, similar to those in the tubes of solid forgings that have been used for the barrels of some 100-pounders The metal round the vent is sound, both in the tube and in the east-iron, none of the cracks usual in cast-iron guns being observable. The wrought-iron appears to be of good quality, and to be sound throughout; the fibre, however, runs parallel to the bore instead of transversely.

The preparation of this gun is stated by the Assistant Superintendent, Royal Gun Factories, to have cost about 62 *l.*, and the result has been so satisfactory that the Committee recommend that Mr. Anderson be ordered to resume his endeavour to line a 32-pounder, making use of a coil cylinder, if possible, and forcing it in by pressure. Mr. Anderson states that about 132 *l.* has been expended in attempts to line two 32-pounders, which have not succeeded, owing to some mechanical difficulties, due apparently to the warping of the gun when heated to permit the lining to enter and to shrink on it. These difficulties, he thinks, he can obviate by another mode of procedure, viz., by forcing in the coil by pressure; and he adds, "that if the guns were required in numbers sufficient to warrant "the cost of the apparatus, then lining them would be a much cheaper opera-"tion than strengthening them by external cylinders."

As it has been successful in the 68-pounder, giving a greater resistance than almost any gun strengthened externally, the Committee are of opinion that it is worth while to proceed further, and recommend, as above, that Mr. Anderson be now authorised to prepare a 32-pounder, according to his original instructions.

J. St. George, President.

PAPER E.

Committee Minute, No. 10,224, 26/10/63.— Report, No. 3,055.

28 October 1863.

PRESENT:

Brigadier General St. George, C.B., R.A.
Captain L. G. Heath, C.B., R.N.
Colonel Hogge, C.B., R.A.
Lieut. Colonel Younghusband, R.A.
Lieut. Colonel R. S. Baynes, Unatt.

Brevet Colonel Lefroy, R.A., Secretary.

SUBJECT:—*Mr. Parsons' Proposals.*

COMMITTEE'S REPORT.

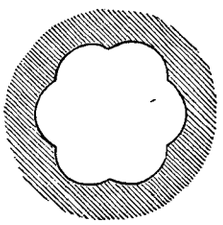
With reference to W. O. Minutes, enclosing Letters of 16th September, 26th September, and 8th October, and a printed Pamphlet, entitled "Guns *versus* Armour Plates."

MR. PARSONS, in the several letters referred to the Committee, and in one which appeared in "The Times" of 7th October, complains that the principle of strengthening cast-iron guns with a wrought-iron lining, which has been applied experimentally to three guns, on the recommendation of the Committee, according to plans proposed by Captain Palliser, is in reality his principle, protected by patent of June 1862, but proposed to the Government as early as May 1860; and he asks for recognition of his priority of invention, together with the privilege of having some guns prepared under his own superintendence for comparison with those of Captain Palliser. The Committee reported fully, on 5th September 1860, their grounds for not recognising Mr. Parsons' then proposal as an original one, and for recommending that the subject should be investigated independently of him, which was done. They consider that the War Office was fully at liberty at any subsequent date to re-open the inquiry at the instance of Captain Palliser, or of any other person whose investigation of the subject should show superior acquaintance with it, or whose views on the whole should appear to the Committee deserving of practical trial. Enclosed tracing, figure 1, in red lines, is an exact reduction of the lining shown in Mr. Parsons' drawing, dated May 1860; and the black lines is a copy of the drawing which accompanied his letter of 23rd September 1863. Figures 2 and 3 are copies of the design given in his printed pamphlet. It will be seen that they differ considerably, and in particular that neither of the two last resembles the first. His present mode of calculating the strength of a gun is also quite different from the mode he employed in 1860. Whether his patent of June 1862 is good at law, and whether Captain Palliser's subsequent patent of November 1862 is a violation of it, are questions the Committee do not feel called upon to enter into. Captain Palliser, in his printed pamphlet which was before them in January last, treats the subject in a very different manner from Mr. Parsons, and the work is both earlier in date and superior in merit to the pamphlet of the latter gentleman. If no experiments of the nature of those advocated by Mr. Parsons were in progress, the Committee would be disposed to advocate a trial of one or other of his last plans; but as those of Captain Palliser embrace precisely the same mechanical questions, and as the Superintendent, Royal Gun Factories, with that officer's aid, is fully competent to meet the difficulties of the case, the Committee see no public ground for originating a fresh series of experiments on Mr. Parsons' proposals. With respect to the suggestion of the note at page 2 of the pamphlet, for experiments to ascertain the pressure of the gas at the bottom of the bore of the gun, the Committee would have preferred that Mr. Parsons, instead of declaiming against the want of this information, had shown how it is to be obtained. The mechanical difficulties of getting this datum with reliable accuracy for such charges as are actually used, and under conditions analogous to those of the charge of a gun, have never been overcome. Sir William Armstrong devoted much attention to the subject, and the Committee were under a hope for three or four years that he would succeed in devising a plan. He has not brought one forward, and is

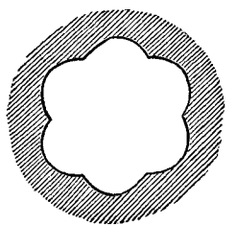
believed not to have satisfied himself of its practicability, reference to a steam-engine indicator working up to 60 or 70 lbs. to the inch is idle in connexion with the pressures which he himself estimates at about 38,000 lbs. (17 tons) to the inch.

Mr. Parsons has proposed a method of rifling, but the Committee find it nearly identical with one proposed and tried by Mr. Morgan in 1860, and do not see any sufficient reason for a fresh trial at the public expense. It does not appear to them to promise any sensible advantage over other systems.

His method of building up guns is represented by the Assistant Superintendent, Royal Gun Factories, as in his opinion inferior to the methods now employed in the Royal Gun Factories. To adopt Mr. Parsons' proposals, he remarks, "would



SECTION THROUGH BORE OF MORGAN'S GUN, 1860.



SECTION THROUGH BORE OF PARSON'S GUN, 1863.

be going back to a less efficient and more expensive construction," an opinion in which the Committee concur. In respect to the method of lining, Mr. Anderson adds, "I can see so little difference in the principle of his plans from "those of Captain Palliser, that I would pronounce them both the same, though "the precise mode of carying them out is dissimilar."

"Although there are some defects in the mode adopted by Captain Palliser "for the insertion of his tube, still, as a whole, I would prefer it to that shown "by Mr. Parsons. On the other hand, I prefer the amount of grip recommended "by Mr. Parsons to that advocated by the other gentleman."

J. St. George,
Brigadier General, President.

Note by the Director General of Ordnance.—The above woodcuts only exhibit the resemblance of section in a general way. The actual grooves of both guns are much less deep, and formed by other curves.

PAPER F.

EXTRACT from PROCEEDINGS of the ORDNANCE SELECT COMMITTEE, Vol. 7, 1865, page 113.

"10. The question as to whether Major Palliser shall be asked to furnish designs for the operation of lining is a difficult one. This officer has devoted particular attention to this subject, and it is very much due to his perseverance that the method has made so much progress. But the Committee do not think that he has such rights of priority in the principle of lining cast-iron guns as to make it morally necessary to employ his services, unless some method that is directly his should be adopted.

"The following memorandum shows his place in connection with this system of construction in order of time:—

"1854. Major Palliser claims to have discovered the advantages of an internal tube: *see* his letter to 'The Times' of 3rd October 1863, but the Committee have no official grounds for admitting such a claim."

"1855. Wharton's patent; Haddan's patent."

"1856. Major Palliser claims to have commenced experiments for lining existing cast-iron guns, but the Committee have no official grounds for admitting such a claim."

"1859.

"1859. Sir W. Armstrong gave some attention to the subject, but *see* Minute 1,308, from which it may be inferred that he thought unfavourably of the plan, and gave it up."

"1859. *November.*—A Mr. Hely proposed to convert smooth-bore into rifled guns, by lining them."

"1860. *May.*—Minute 1251, Mr. Parsons proposed the same thing, and subsequently patented his plan in 1862."

"1860. *September.*—Minute 2,048, Committee rejecting Mr. Parsons' claim to interfere on the ground that he had no exclusive property in the mode of strengthening guns, asked to have two guns lined in the Royal Gun Factories, which was allowed. One gun was tested to destruction in November 1861, a second in August 1862."

"1861. *February.*—Major T. Hay Campbell, R.A. (Madras), applied to the secretary, Supreme Government, India, for a patent for a plan of 'lining ordnance, cast-iron and gun-metal with tubes of metal of greater cohesive powers and greater elasticity than that of the guns themselves,' and he claims to have 'practically introduced the plan in 1860.'"

"1861. *16th November.*—The same officer addressed the Inspector General of Ordnance and Magazines, Fort George, for permission to apply his method to a brass 6-pounder, which was at that time refused. A 6-pounder was, however, issued to him in November 1863, lined, rifled, and converted to a breech-loading 8-pounder, which is now under the consideration of the committee."

"1862. *November.*—Minute 7,743. Major Palliser, whose patent is dated 11th November 1862, first came before the Ordnance Select Committee, and the talent evinced by his writings and their scientific treatment of the subject, induced the committee to take him by the hand.

"The same reasons would make it prudent to engage his services now, if the Royal Gun Factories feel any want of assistance. Under any circumstances the greatest credit is justly due to him; but whether he or Mr. Parsons, or any other patentee would have a claim for a royalty or for a pecuniary grant, unless some feature of the process applied is effectively protected by their respective patents, is a question which the Committee can only at present refer to as not unlikely to arise, in the event of the plan being carried out on a large scale, but without desiring to prejudge it."

PAPER G.

Committee Minute, No. 16,331, 8/8/65, and 16,311, 8/8/65.
Report, No. 3,863.

14 August 1865.

PRESENT:

Captain L. G. Heath, C.B., R.N.
Colonel Younghusband, R.A.
Colonel Freeling, R.E.
Lieut. Colonel R. S. Baynes, Unatt.
Capt. Haig, R.A., Assistant Secretary.

SUBJECT:—*Mr. Parsons' proposals for strengthening existing Cast-iron Guns and for the Construction of new Rifled Ordnance.*

COMMITTEE'S REPORT.

With reference to W. O. Minutes, 13/5/65, and 5/8/65.

THE Committee have the honour to report that they have fully considered Mr. Parsons' proposals for strengthening cast-iron guns by means of internal tubes, and also the application of similar principles to the construction of entirely new guns, as proposed by him.

His plan generally resembles that of Major Palliser, the principal difference between the two being that in Major Palliser's system the tube or tubes are inserted at the muzzle, and in many cases the original cascable is left; in others, although he inserts a screw cascable, it is of smaller size than the tube, having a good shoulder or support for the latter: in that of Mr. Parsons, the breech of the gun is invariably bored out, and after the tubes have been inserted at the breech, a new breech piece or cascable is screwed into the gun, without leaving any shoulder of the original metal to support the tube.

From a consideration of the relative amounts of tool cutting necessary in both cases, the Committee are of opinion that the plan of Major Palliser would be the most economical. Mr. Parsons, who met the Committee on the 14th June, pointed out with justice that by inserting the tubes at the breech, they can be tapered from breech to muzzle, leaving them thick where they have to withstand a great pressure, and thinner where the pressure is less, which cannot be done in Major Palliser's system. This tapering, however, requires very nice workmanship.

Mr. Parsons, in addition to his principles of construction, proposes a system of ribbed rifling somewhat similar to that of Mr. Lynall Thomas, of which the Committee do not think favourably; but they are of opinion that the question of rifling is entirely separated from that of construction, and should not be mixed up with it by the trial of new systems of construction and rifling in the same gun.

In Report, No. 3,850, Minute 16,234, the Committee recommended the conversion of four 32-pounder guns, and four 24-pounders on Major Palliser's plan by Sir William Armstrong & Co. at the rate of 168 *l.* for each gun, and that firm has intimated that if a large number were required they would line them on Major Palliser's plan at the rate of

138 *l.* for each 32-pounder.
132 *l.* „ 24 „

The Committee have received from Mr. Parsons copies of estimates for the conversion of guns on his principle by the Millwall Iron Company as follows, there being three plans of different strength and expense, and being made on the supposition that a large number would be required, are to a certain extent comparable with the above estimate of Sir William Armstrong & Co.:—

Gun.	No. 1 Plan.	No. 2 Plan.	No. 3 Plan.
	£. s. d.	£. s. d.	£. s. d.
68-pounder -	251 – –	212 16 –	199 2 –
32-pounder -	165 11 –	131 12 –	124 4 –

On the whole these two estimates, though for conversion on different plans, substantially corroborate each other.

As regards the application of Mr. Parsons' plan to the construction of entirely new guns, he merely states his ability to supply such guns, having all the endurance of the present built-up wrought-iron ordnance of the service, and at only half their cost, and expresses a wish to be allowed to supply a 300-pounder as a first experiment. The Secretary of State, however, was pleased to direct in November last that a gun answering this description should be made on Major Palliser's designs, at a cost of 600 *l.* The execution of this order has been delayed for some time on account of economical questions as to whether the outer cast-iron casing should be made from an existing 18-ton mortar, or should be specially cast; the latter course has been recently approved, and this gun is now in hand.

The Committee see no good reason for ordering a second on a plan so nearly the same as that of Mr. Parsons.

It appears then that both as regards the alteration of existing cast-iron guns and the manufacture of new guns there are experiments pending with the system

system of Major Palliser, which, as has already been stated, differs only in details from that of Mr. Parsons.

The Committee, in Report No. 3,055, Minute 10,224, expressed the opinion that not only had Major Palliser given his attention to this subject earlier than Mr. Parsons, but had treated it in a superior manner.

They see no reason to alter this opinion now, and cannot recommend that any trial of Mr. Parsons' plan should be made until that of Major Palliser has been fully tried, and a decision come to as to whether or not extensive contracts shall be taken, or large measures entered into, at the Royal Gun Factories for the lining of the existing cast-iron guns, in which case there will be ample opportunity of trying both methods, should experience suggest any good reason for doing so.

J. H. Lefroy,
Brigadier General, R.A., President.

PAPER H.

Committee Minute, No. 19,282, 13/7/66.—Report, No. 4,232.

16 July 1866.

PRESENT:

Captain L. G. Heath, C.B., R.N., Vice President.
Colonel Younghusband, R.A.
Colonel Freeling, R.E.
Lieut. Colonel Wray, C.B., R.A.
Lieut. Colonel T. L. Mayne, Unatt.

Major Heyman, R.A., Secretary.

SUBJECT:—*Mr. P. M. Parsons' Method of strengthening Cast-iron Guns.*

COMMITTEE'S REPORT.

With reference to W. O. Minute 10/7/66.

THE Committee have the honour to report that they have fully considered the letter from Mr. Parsons now referred to them, and that they can find therein nothing to induce them to change the opinion they have expressed on many occasions, and more particularly in Report No. 3,863, Minute 16,331. The Committee believe, from what they have already seen, that cast-iron guns lined either upon Mr. Parsons or any other similar system will prove amply strong enough for rifled shell guns intended for use against wooden ships, or for the land fronts of fortifications, or for siege artillery, and as to guns of that nature, they think the question between lining our old cast-iron guns and making new ones of wrought iron, will eventually be decided from a consideration of the relative expense of the two systems.

With respect to the heavier nature of guns made *de novo* with cast-iron jackets, no decided opinion can be given until the 12-ton 9-inch gun of this description, already ordered, has been tried.

The comparison drawn by Mr. Parsons between the performance of his gun under the instructions of the French Government, and that of the 7-inch Woolwich gun, No. 200, is altogether illusory. It is not the total quantity of powder and shot fired from a gun which destroys it, but the largeness of the individual charges, and if this were not the case, the Committee need only point to the fact of the wrought iron 64-pounder recently made in the Royal Arsenal at a cost of 120 *l.*, having fired 16,000 lbs. of powder and 128,000 lbs. of shot without bursting, as a proof that it is a more efficient gun than that of Mr. Parsons, which having cost 256 *l.*, burst after firing but 12,763 lbs. of powder and 85,519 lbs. of shot.

The Committee, however, abstain from making such a comparison, because the charges fired from Mr. Parsons' gun were individually larger than those fired from the Woolwich gun.

The Committee wish in conclusion to repeat the opinion they have before given, that there is no essential difference between the method of lining proposed by Mr. Parsons and that proposed by Major Palliser.

The merits of the system will be fully brought out in the trials already ordered and partially completed. A very large sum of money has been expended upon them, and the Committee think no further expense should be incurred at present in this direction.

L. G. Heath.

PAPER I.

Committee Minute, No. 23,934, 3/1/68.—Report No. 4,860.

8 January 1868.

PRESENT:

Brigadier General Lefroy, R.A., President.
Captain W. G. Luard, C.B., R.N.
Colonel Freeling, R.E.
Colonel Wray, C.B., R.A.
Lieut. Colonel G. Shaw, R.A.
Lieut. Colonel T. L. Mayne, Unatt.

Major Heyman, R.A., Secretary.

SUBJECT:—*Mr. P. M. Parsons' Method of strengthening Cast-iron Guns with internal Tubes.*

COMMITTEE'S REPORT.

With reference to W. O. Minute 27/12/67.

IT appears from the papers quoted above, which have been forwarded to the Committee to note and to demand the necessary stores, that Mr. Parsons has, by permission of the Secretary of State for War, been left unrestricted as to the system of rifling to be applied to the 68-pr. gun of 95 cwt., which has been handed over to him for conversion into an 8-inch rifled gun, and further, that his proposal to test the gun for endurance in that state up to 1,000 rounds with 30 lbs. charges and shot of 150 lbs. has been approved.

The Committee are not sanguine of a successful result from this experiment, the cost of which is estimated at about 2,300 *l.*, and are of opinion that if cast-iron guns are to be lined at all, it must be done with coiled iron, and not with steel tubes. The expense of the latter, chargeable as they expect it to be with a large proportion of failures, from the difficulty of setting tubes of that material home without overstraining or splitting them, appears to them to preclude its adoption for guns whose principal recommendation is economy. They find it necessary to introduce the above qualification, in consequence of the doubts recently thrown by the superintendent, Royal Gun Factories, on the policy of continuing to use coiled iron for the inner tubes of any guns. This question will be considered separately in an early report, with the evidence on the subject of Sir William Armstrong and others. The Committee also think that the system of rifling adopted by Mr. Parsons, which is a ribbed system, and open to many of the objections formerly urged against the ribbed system proposed in 1860 by Mr. Lynall Thomas, is such as could not be advantageously introduced into the service. The difference of material in the "A" tube will render it very difficult to draw a comparison between the methods of strengthening cast-iron guns, advocated by Mr. Parsons and Major Palliser respectively, either as regards cost or endurance. The charge is extravagant in proportion to the weight of the gun, and could never be used in practice.

With

With regard to the supply of shot for which Mr. Parsons has furnished a drawing, the Committee beg to call attention to the danger attending the use of pointed shot when firing into the cells at the proof butt, and as the Committee understand the gun to be submitted, not for the sake of trying the merits of a new system of rifling, on which they have not been called upon to report, but to be tested for its endurance, they recommend that he be instructed to provide flat-headed shot for this experiment.

If the Secretary of State desires a report on the system of rifling, 120 pointed or service projectiles will be sufficient, and half of them should be shells, in order that it may be ascertained whether their strength will be affected by the grooves on their exterior.

J. H. Lefroy, Brigadier General, R.A.,
President.

PAPER J.

Committee Minute, No. 25,687.—Report, No. 5,087.

18 August 1868.

PRESENT:

Captain W. G. Luard, C.B., R.N., Vice President.	Colonel Wray, C.B., R.A.
Captain Hamilton, R.N.	Lieutenant Colonel G. Shaw, R.A.
	Lieutenant Colonel T. L. Mayne, Unatt.

Lieutenant Colonel Heyman, R.A., Secretary.

SUBJECT:—*Mr. Parsons' Claims to have originated what is generally known as the Palliser System of Conversion.*

COMMITTEE'S REPORT.

With reference to W. O. Minute 3/8/68, enclosing Mr. Parsons' letter of 22 July 1868.

THE Committee have the honour to refer to their Reports of 5th September 1860, No. 1,074, and 28th October 1863, No. 3,055, as having in great measure anticipated the reply they have to make to Mr. Parsons' present commuication. They there adduced a succession of proposals from 1808 downwards to strengthen guns by internal linings, and they showed upon Mr. Anderson's evidence that the subject had occupied the attention of Sir William Armstrong and himself to a considerable extent before Mr. Parsons brought it forward.

They decided in 1860 on recommending an experimental trial, but reported that there was no necessity for connecting this trial with Mr. Parsons' proposal, and that the Department of the Royal Gun Factories was competent to carry it out without his intervention.

Two guns were accordingly lined in the Royal Gun Factories in 1861-2, a 68-pr. and a 32-pr., without consulting or following Mr. Parsons, and before Major Palliser had made any proposal on the subject, and they both exhibited great endurance under the test of increasing charges at that time employed. The second of these was tested in August 1862, and it was in that month that Major Palliser first addressed the War Office. The Royal Gun Factories had met with greater difficulties than had been anticipated in inserting the linings; and the Committee, struck with the clearness and ability of Major Palliser's reasoning on the subject of this conversion, shown in his written communications and in the pamphlet he published in January 1863, recommended in February of that year, that he should be allowed to line a 68-pr., "in order to ascertain by experiment how far these mechanical principles, which are "urged by Captain Palliser with great force and clearness, and supported "by the investigations of two eminent mathematicians, are borne out by "experience."

The Committee contend, and have always contended, that no injustice was

done to Mr. Parsons by this proceeding. Had he brought forward his proposals with the same ability he would have received the same treatment.

The Committee are not prepared to admit that had Mr. Parsons matured his patent of July 1860, guns now being made as Major Palliser's would have been an infringement of it, on which he could have recovered damages. It turns upon whether there is any valid distinction between "a tube of wrought iron" and tubes of the specific character described by Major Palliser in his patent of November 1862, and whether such a general phrase covers everything to which it is applicable. At any rate there is not, and never has been, any close resemblance in the details of the constructions carried out under the two patents. Both patentees have sent in numerous drawings, and often changed their plans, but some broad distinctions have always remained, one being that Mr. Parsons inserts his tubes from the breech end, and Major Palliser from the muzzle, which involves several other differences of detail.

The Committee have never pronounced a final opinion on the relative merits of the two systems, but they forwarded in 1863 an opinion from the Assistant Superintendent, Royal Gun Factories, unfavourable to Mr. Parsons. In 1865 again they deprecated the expense of a double set of experiments, but pointed out that if it should be decided to line guns on a large scale there would be "ample opportunity of trying both methods, should experience suggest any "good reason for doing so." The only experience capable of doing this will be—

(1.) Failure of Major Palliser's guns.

(2.) An equal or greater degree of endurance shown by the Parsons' gun now under manufacture.

(3.) An advantage of economy.

At present, Mr. Parsons' plans appear the more expensive of the two, and the Committee are not aware of any grounds whatever for his assertion that had he "been allowed the same opportunity of making experiments as have "been accorded to Major Palliser, a considerable saving in money would "have been effected." A very large part of Major Palliser's experiments have been made at his own expense.

Mr. Parsons refers to some statement that his system had been tried and failed. The Committee are not responsible for such a statement. The only trial known to them, viz., the one made in France in 1865, was successful, although not exceeding in severity that which a gun lined on Major Pailiser's system has gone through, taking into account the difference between French and English powder.

Parsons' Gun, 6·5 inch—30-pr.	Palliser, No. 247, 7-inch—68-pr.
500 rounds, 100 lbs. shot; charge 16½ lbs., French powder = 12½ lbs. English.	40 rounds, 100 lbs. shot; charge, 20 lbs.
510 rounds; charge, 8·8 lbs.; shot, 69·4 lbs.	740 rounds, 100 lbs. shot; charge, 16 lbs.
	20 rounds, 100 lbs. shot; charge, 12 lbs.
1,010	800
Powder, 12,763 lbs. French, or 9,048 lbs. English.	Powder, 12,880 lbs.
Shot, 85,519 lbs.	Shot, 80,000 lbs.

On the foregoing grounds, the Committee see no reason for disturbing the present arrangements, or giving any further consideration to Mr. Parsons' plans or his claims, until the gun which he states to be nearly ready for trial has been tried.

(signed) *W. G. Luard,*
Vice President of Ordnance Select Committee.

PAPER K.

Committee Minute, No. 26,249.—Report, No. 5,170.

4 November 1868.

PRESENT:

Brigadier General Lefroy, R.A., President.
Captain W. G. Luard, C.B., R.N., Vice President.
Colonel Freeling, R.E.
Colonel Wray, C.B., R.A.
Colonel G. Shaw, R.A.
Lieut. Col. T. L. Mayne, Unattached.

Lieutenant Colonel Heyman, R.A., Secretary.

SUBJECT.—*Mr. Parsons' 8-inch—68-pr. rifled M.L. Gun. Expl. No. 347, failed at the 163rd round,* 23/10/68.

COMMITTEE'S REPORT.

With Reference to W.O. Minutes 24/8/67, 26/10/67, 27/12/67, and 31/1/68.

THE Committee have perused the Report of the Superintendent, Royal Gun Factories, of the failure of Mr. Parsons' 8-inch—68-pr. converted gun, Expl. No. 347, which took place on the 23rd October at the 163rd round, with 30 lbs. charges and 150 lbs. shot; they have likewise inspected the gun itself, and find that, as stated, the cast-iron part of the gun is split longitudinally on the left side, from breech to front part of trunnions, the crack measuring about five feet. The steel tube is, however, still intact.

In August 1867, at Mr. Parsons' earnest solicitation, the Secretary of State acceded to his proposal to convert a 68-pr. cast-iron gun of 95 cwt. into a rifled 8-inch gun, by lining it with a steel tube on the method he advocates for trial of his system, but on the distinct understanding that there would be no direct competition with guns converted on Major Palliser's principle, nor any delay in proceeding to provide the service with guns on that system, which had already been introduced into the service.

Mr. Parsons was left free to adopt any form of rifling for his experimental gun; the operation of conversion was carried out under his own direction and supervision at the London Ordnance Works, and the projectiles, although manufactured in the Royal Laboratory at Woolwich, were made in accordance with the designs furnished by Mr. Parsons himself.

From a tracing supplied by Mr. Parsons, the following details of construction and rifling are derived:—

The calibre of the converted gun is 8 inches.

Length of bore, 129·5 inches.

"A" tube { projects 14 inches from muzzle of original gun.
thickness at { chase, 1·8 inches.
breech, 1·95 ,,

"B" tube { length, 52 inches.
thickness at { breech, 2·35 inches.
trunnions, 1·75 ,,

The A tube is screwed into B tube at breech for a length of 4·5 inches.

Steel collar screwed on to projecting part of A tube; length of screwed portion, 4 inches.

Rifling { 3 ribs { width, 0·6 inches.
height, 0·2 ,,
spiral, 1 turn in 30 calibres.

Vent, vertical at 8 inches from bottom of bore.

Form of chamber, rounded; radii = 3·25 inches, with projecting centre.

The gun was delivered about 25/8/68, and in the first instance was sent to

Shoeburyness, at Mr. Parsons' request, for trial of range and accuracy, in connection with the ribbed system of rifling he had adopted.

Mr. Parsons explains that he selected this system because the windage would thereby be suppressed more perfectly, scoring prevented, and the full velocity due to the charge obtained; and further, that by using ribs he arrived at the nearest approach to a cylinder, and avoided the weakening of the tube due to a grooved system of rifling.

The Committee annex a printed abstract of the results of the practice:—55 rounds of cast-iron shot and 59 rounds of common shell, average weight 150 lbs., were fired with 30 lbs. charges; the gun was mounted on a strengthened wood garrison sliding carriage and strengthened dwarf traversing platform, fitted with American compressor.

At the commencement of the trial, several of the shot jammed in the bore when loading, owing to the brass bearings in the grooves on the body of the projectile being too high; these were filed down under Mr. Parsons' direction, and the subsequent loading, with but few exceptions, was performed without difficulty.

The practice on the whole is very good. After firing 114 rounds at Shoeburyness, the gun was returned to Woolwich to complete its trial for endurance, which Mr. Parsons anticipated would reach to at least 1,000 rounds.

The Committee, however, had only provided 426 shot.

It failed, as already stated, at the 49th round of this part of the programme, or at the 163rd round of the trial from its commencement.

In a communication recently received from Mr. Parsons, he frankly admits that the work imposed on the gun has been beyond its powers of resistance, and that he has been mistaken as to the force generated by the heavy charges proposed by him, viz., 30 lbs. powder and 150 lbs. shot. He seeks, by theoretical reasoning, to show that the inner surfaces of the A and B tubes have been strained beyond their elastic limits, and he estimates that if they had been about 20 per cent. stronger the gun would have sustained any number of rounds with impunity.

With regard to further trial, Mr. Parsons suggests one of two courses, viz., either to put the present tube into another and heavier casing, or to continue the firing of the gun in its present state with reduced charges of 20 lbs.

The Committee think it due to Mr. Parsons to acknowledge the remarkable degree of resistance his gun has exhibited, although it has not nearly approached his original expectations.

They also consider that the nature of the failure, if not the result of accident, is as favourable as could be desired, but they do not feel warranted in recommending a continuance of costly experiments, with guns of this construction, on the grounds of its much greater expense than that of lined guns on the Palliser system, which they believe will fully answer the requirements of the service for guns of that description, which have been introduced only as a measure of economy and for secondary purposes of defence.

(signed) *J. H. Lefroy,*
Brigadier General, R.A., President.

Enclosure of Paper K.

Minute 26,022.

PARSONS' 8-inch—68-pr. cast-iron rifled M. L. gun, lined with a steel tube. Expl. No. 347.

Weight, 103 cwt.; breech preponderance, 6 cwt.; length—nominal 12 feet, over all 12 feet 6 inches, of bore 130·3 inches. Rifling—3 projecting ribs, height 0·2 inch; width—top 0·6 inch, bottom 1·1 inch. Spiral 1 turn to 20 feet 6 inches.

Carriage—wood, garrison sliding, strengthened, 26 cwt. 1 qr. 0 lbs. No. 94.

Platform—wood, dwarf traversing, do 39 „ 1 „ 16 „ No. 33; slope, 5¼.

Secretary

Secretary submits the following abstract giving the result of the trial of the above-mentioned gun for range and accuracy.

	Solid Shot.	Common Shell.
Weight, empty	150·5 lbs.	142 lbs. 0 ozs.
Capacity	—	8 „ 0 „
Plug	—	0 „ 3 „
Diameter: over body	7·90 inches.	7·90 inches.
Diameter: over brass stud	7·92 „	7·92 „
Diameter: over ring at base	7·95 „	7·95 „
Length	15·72 „	20·2 „
Length of groove on projectile	9·5 „	13·4 „
Width of groove: on projectile	0·8 „	0·8 „
Width of groove: at stud	0·62 „	0·62 „
Rear stud from base of projectile	0·25 „	0·6 „
Front stud from rear stud	4·6 „	6·2 „
Diameter of studs	1·8 „	1·8 „

3 rows of brass studs, 2 in a row, part in the grooves and part out.

Charge 30 lbs., length 20·0 ins., diameter 7·0 ins. Powder R. L. G. 5. 12. 66., lot 1158.

—	Date.	No. of Rounds fired.	Projectile.	Corrected Elevation.	Mean Recoil.	Time of Flight corresponding to Mean Range.	Ranges. Minimum.	Ranges. Maximum.	Ranges. Mean.	Mean Difference of Range.	Mean observed Deflection.	Mean reduced Deflection.	Remarks.
					feet.	secs.	yds.	yds.	yds.	yds.	yds.	yds.	
	9/9/68	10	Cast iron [illegible] head 1 D.	1° 20′	6·2	2·11	760*a*	1,008	932	51·5	2·4	1·6	*V.* observed.
	8/9/68	10	„	3° 10′	6·3*c* and to stops violently.	4·68	1,804	2,005	1,921	49·8	15·2	2·4	6 shot jammed — metal rammer used to force one home. The gun was well sponged out after the last case with a very wet sponge; it then loaded easily.
	„	3*b*	„	5° 7′	6·6 and to stops.	7·40	2,808	2,870	2,831	26·3	39·8	4·8	
	9/9/68	1	„	5° 7′	6·3	Not observed.	–	–	2,786	–	33·8	–	
	10/9/68	6	„	5° 7′	6·8	7·43	2,628	2,857	2,760	53·2	27·6	1·6	
	„	10	„	7° 5′	6·1	9·82	3,453	3,591	3,538	36·2	55·6	2·3	1 jammed.
	11/9/68	10	„	9° 4′	6·2	12·30	4,150	4,317	4,232	33·5	106·7	10·2	3 jammed—1 at muzzle, and had to be extracted in the other 2, a lever was used to force them home: 1 of these was noisy in flight.
	14/9/68	5	„	19° 8′	5·8	23·02	6,674	6,800	6,715	34·2	319·0	12·2	
	9/9/68	10	[illegible] head 1·5 D.	1° 20′	6·3	1·97	845	975	912	29·4	1·4	0·6	*V.* observed.
	„	10	„	3° 10′	6·3 and to stops.	4·76	1,875	2,038	1,965	37·6	7·4	1·3	1 jammed.
	10/9/68	10	„	5° 7′	6·2	7·42	2,741	2,904	2,826	45·5	15·4	1·9	
	„	10	„	7° 5′	6·0	10·05	3,613	3,730	3,667	28·6	24·6	1·8	
	11/9/68	10	„	9° 4′	6·2	12·49	4,304	4,438	4,381	31·5	64·1	7·3	
3↓	„	3*b*	„	19° 3′	5 9	24·70	7,200	7,300	7,240	40·0	171·0	19·0	
↘4	14/9/68	6	„	19° 3′	5·3	23·79	6,890	7,050	6,944	54·3	247·6	9·2	

a Fell in water; the deflection was not observed.
b Further practice stopped by the tide coming in.
c The compresser was tightened after each successive recoil.

Papier-maché wads were used each round.

After the 3rd round of the first day's practice (8/9/68) the studs of the shot were filed down and all the projectiles used in the subsequent practice had their studs carefully filed down under Mr. Parsons' direction.

Effects of the Practice on the Gun and Carriage.

Round.

16. Right cheek of platform commencing to split across in centre.

18. Cascable cracked through.

24. Collar at muzzle has moved forward about 0·01 inch.

25. Quoin split in half.

32. Vent burred.

33. Screws giving way in ribbon plate of platform.

34. End of cascable loop broken off. All screws on rear of right ribbon plate of platform broken off.

38. Two bolts holding right compressor plate of carriage broken.

41. Small quoin broken.

43. Quoin broken. The gun recoiled violently to stops, driving them back 1¾ inch. Platform tilted up and touching ground, and gun was overturned, the carriage resting on it. Tangent scale broken. The bottom of the carriage is much scored by the screws in ribbon plate of platform.

65. Screw holding rear of right strengthening stay of platform dropped out.

97. Vent burred.

101. Right cheek of platform split across in centre; underneath left cheek also split longitudinally.

102. Platform packed up underneath with skidding.

108. Both strengthening stays of platform loose from screws giving way.

111. Slide jumped off racers.

112. Platform slipped four inches to rear. Trucks lashed to posts in front; racers on granite.

114. Lashings broken. Platform slipped off granite.

Further practice was stopped by verbal order of the Vice-President of Ordnance Select Committee.

The Ordnance Select Committee was present during practice of the 8–9/9/68, and Mr. Parsons throughout the practice.

Remarks of the Superintendent, Shoeburyness.

The gun shows no signs of wear or damage, except to the end of the cascable loop, which was broken off at the 18th round.

The sights used were the ordinary ones for 68-pr. S.B. guns.

The projectiles, with few exceptions, loaded easily (when once in the bore) after the first day's practice, the studs having all been considerably filed down. The gun was also sponged out carefully every round with a very wet sponge.

Both shot and shell were difficult to enter into the bore, in consequence of the ribs in the gun extending to the muzzle, and thus necessitating a very nice adjustment of the projectile in the bearer before it could be entered into the bore.

The recovered projectiles show very slight signs of wear on the studs, some of them being hardly marked at all.

The papier-maché wads were all rather difficult to load; the lubricating material on their edges was found to foul the bore of the gun, especially the ribs, and was therefore scraped off after the first day's practice.

The gun was very violent in its action on the carriage and platform, and the quoin was always thrown several yards to the rear by the kick of the breech.

Present condition of carriage and platform:—

Carriage; still quite serviceable, though much shaken at joints, and under side of the brackets much scored by screws in ribbon plate of platform.

Platform; both cheeks split across at the middle transom; both strengthening stays loose, all screws in rear having come out; both flange (2-inch) bolts holding rear block bent; ribbon plates on top of cheeks loose from screws giving way; stops driven back 1¾ inch.

PAPER L.

Committee Minute, No. 26,452,—485.—Report, No. 5,208.

7th December 1868.

PRESENT:

Brig. Gen. Lefroy, R.A., President.
Captain W. G. Luard, C.B., R.N., Vice-President.
Colonel Freeling, R.E.
Captain Hamilton, R.N.
Colonel Wray, C.B., R.A.
Colonel G. Shaw, R.A.
Lieut. Colonel T. L. Mayne, Unatt.

Lieut. Colonel Heyman, R.A., Secretary.

SUBJECT:—*Mr. Parsons', C.E., Claims for Compensation and Reward in consequence of the Adoption into the Service of the Palliser System of lining Guns.*

COMMITTEE'S REPORT.

With reference to W. O. Minute, 24/11/68.

THE Committee have perused with attention Mr. Parsons' communications of the 2nd July and 20th November respectively, in which he claims to have been the original inventor of the Palliser system of lining guns, recently adopted into the service for secondary purposes of defence, and for which, in consideration of the time and money he has expended in the matter, which he estimates together worth 6,750 *l.*, he now asks for the sum of 10,000 *l.*, to include a fair and reasonable compensation.

The Committee have in several former reports explained fully how it arose that Mr. Parsons' proposals of May 1860 were set aside, and the grounds on which, in 1863, the subject of lining cast-iron guns was re-opened, in connection with later proposals of Major Palliser, it appears to them to be a question for the decision of the Secretary of State for War whether those grounds were a sufficient justification of the course adopted.

The Committee do not deny that many general features of resemblance exist between the two plans, but they cannot admit Mr. Parsons' claim to have been the original inventor of what is known as Major Palliser's system, still less his claim to be paid for his time since 1860, and for all expenses he has incurred, with a further sum of 3,250 *l.* as compensation or reward. As against Major Palliser, the question is one of validity of patent, which can be decided in a court of law; but the Committee must observe that several persons before Major Palliser had proposed to line guns, and it had actually been done in the Royal Gun Factories before he came forward.

As against the Government, the Committee maintain its right to make a selection between individuals competing to perform the same service. Whatever expenses Mr. Parsons may have been put to in the pursuit of the object he has had in view, have been incurred without encouragement on the part of Her Majesty's Government.

In 1865, when for the second time he pressed his system upon the consideration of the Committee, he was requested to furnish drawings for the conversion of 68-pr. and 32-pr. guns on his principle, the expenses he incurred, amounting to 52 *l.* 10 *s.*, were re-imbursed him, and he has since been liberally used in being released from his offer to bear the expense of the late trial of his 8-in.—68-pr. gun, amounting to 1,377 *l.* 18 *s.* 1 *d.*

As this controversy between Major Palliser and Mr. Parsons has been going on for a period of eight years, the Committee submit that the case is one which had best be referred to some independent arbitrator; this course was proposed by Major Palliser himself in 1867.

There is one remark in Mr. Parsons' communication of the 20th November which the Committee cannot pass without notice. Alluding to the failure of his 8-in.—68-pr. gun, he states that the result has been brought about much earlier than it otherwise would have been by the firing of two exceptionally heavy proof charges of 37½ lbs. powder "which are out of all proportion to the

 "weight

"weight of the gun, unless the object was to blow it to pieces at the first "round."

If this is Mr. Parsons' opinion, he had an opportunity of saying so when the proof proposed for his 8-in. gun, which is in exact accordance with the existing rules for the proof of service guns, was communicated to him. His reply, however, was to the effect that he had no objection to the proof being carried out as proposed, and the charge employed bore the usual service proportion to what he had assigned as the charge of his gun.

(signed) *J. H. Lefroy,*
Brigadier General, R. A.,
President.

7 December 1868.

Colonel Wray and Lieutenant Colonel Mayne desire to record their dissent from the recommendation that the question between Major Palliser and Mr. Parsons be referred to arbitration, for the following reasons:—

1st. Mr. Haddan's patent of 1855, and Major Hay Campbell's suggestion to the Government of India in 1859, in their opinion entirely dispose of Mr. Parsons as the original inventor.

2nd. If Mr. Parsons has a case against Major Palliser for infringement of patent, the law courts are open to him.

3rd. The country has derived no benefit whatever from Mr. Parsons' researches.

4th. Mr. Parsons has received no encouragement at any time from the Committee to warrant his applying for a reward, but, on the contrary, has continued to *force* his suggestions upon them unasked.

5th. Mr. Parsons' present system and that of Major Palliser are, in their opinion, as distinct and different as two systems can be.

Paper M.

The Right Honourable *E. Cardwell,* M.P., Secretary of State for War.

Sir, Blackheath, S. E., 23 April 1869.

I HAVE been informed by Mr. Samuda that he has had some conversation with you in reference to my claims for the invention of strengthening cast-iron guns now adopted into the service, and by his advice I beg permission to place before you the broad facts in as concise a manner as possible, feeling sure that they will be confirmed by an impartial investigation, and in the full trust that you will acquiesce in the justice of my claims, and award me the compensation to which I believe I am fairly entitled, and for which I stipulated when the invention was accepted, nine years ago.

The facts are briefly these. At the beginning of the year 1860 the Government had expended upwards of 40,000 *l.* in endeavouring to convert cast-iron smooth-bore guns into rifles, by strengthening them with outside hoops, but without success, and the attempt was at last abandoned as hopeless, when I submitted my invention of strengthening them on quite a new system, the reverse of what had been practiced before, viz., by inserting a wrought iron or steel tube inside in a suitable manner which I described, and the advantages of which I explained. The proposal was considered by the Ordnance Select Committee, accepted and acted upon, and two guns altered in the Royal Gun Factories upon my plan, and bearing my name, were tested and proved successful, and were subsequently referred to along with another strengthened in precisely the same manner, in 1862, but then under Major Palliser's name, who from that time had the superintendence of further experiments, the result of which has been (notwithstanding many failures consequent on, as I consider, the imperfect way in which the plan was in many instances put in practice, and which caused unnecessary expense and loss of time), that the invention in all its essential points, identical with my first proposal, is now adopted into the service.

That

That a large saving will result from the adoption of the invention is shown by the comparative prices of these guns with new wrought-iron guns in the Report of the Ordnance Select Committee of 3rd February 1868, and only estimated on the guns it will be necessary to provide during the next few years, it will, with the saving in the carriages, at a moderate estimate, amount to fully 500,000 *l.*

With these facts before you, I feel sure I may with confidence leave my case in your hands, and, begging your favourable attention to my claims,

I have, &c.
(signed) *P. M. Parsons.*

MR. PARSONS' CASE.

PROCEEDINGS of a COMMITTEE assembled at the WAR OFFICE, on Friday, 6th August 1869.

PRESENT:

Lord Northbrook, Parliamentary Under Secretary of State for War, President.
Major-General the Right Hon. Sir H. K. Storks, G.C.B., G.C.M.G., Controller-in-Chief.
Captain the Hon. J. C. Vivian, M.P., Lord of the Treasury.
Major General Sir J. Wm. Gordon, K.C.B., Inspector General of Engineers.
Major General J. H. Lefroy, R.A., Director General of Ordnance.
Major General G. Gambier, C.B., Deputy Adjutant General, Royal Artillery.
Colonel W. F. D. Jervois, C.B., R.E., Deputy Director of Works.
C. M. Clode, Esq., Solicitor to the War Department.
Colonel Milward, C.B., Royal Artillery, Secretary.

Resolved,—That the sum of 1,000 *l.* be paid to Mr. Parsons, in consideration of his having, at an early period, directed the attention of Government to a method of converting ordnance, the principle of which has been ultimately adopted in the public service.

(signed) *Northbrook.*

PAPER N.

REPORT of Mr. *Charles Hutton Gregory,* C.E.

My Lord, 1, Delahay-street, Westminster, 19 July 1869.

1. IN compliance with the instructions conveyed in your letter of May 28th, I have now the honour to report to you, for the information of the Secretary of State for War, my opinion as to the extent of identity, if any, which exist between the plan for the conversion of cast-iron smooth-bore guns into lined rifle guns, proposed by Mr. Parsons to the Secretary of State in 1860, and that of Major Palliser, upon which a certain number of guns were converted for the Government in 1868.

2. After generally examining the nature of the case, and having reference to the intimation given in your Lordship's letter of instructions, that I might call upon Mr. Parsons and Major Palliser for personal or written explanations, I considered that I should obtain information in a clearer form, and at less sacrifice of time and expense, by written documents than by verbal communications.

3. Accordingly, on 1st June, I addressed both those gentlemen, inviting them to send me a memorandum of their views on the question of identity which had been referred to me, and proposing that those statements should be exchanged, and each have the opportunity of making a reply; intimating my opinion that this course would make personal meetings unnecessary, at the same time inviting both to inform me if they thought any other course would be preferable.

4. Both gentlemen approved of the course I proposed, which was afterwards extended to rejoinders upon the replies. I annex copies of the statements, replies, and rejoinders, as an Appendix to this Report: these papers deal with the whole question exhaustively, and with great ability, but they contain much extraneous matter, beyond the limits of the question referred to me, and to which I need here make no further reference; and, indeed, I think I shall best carry out your Lordship's views, by endeavouring to bring the question to issues as short and simple as its nature will allow.

5. By reference to the drawing, No. 2,668, and the agreement with Sir William Armstrong & Co., made 18th September 1868, the following appear to be the leading features of Major Palliser's plan as carried out at that time:—

a. The barrel is of coiled wrought-iron, the breech end being a double tube, of which the outer one is shrunk on to the inner, the double tube coming up to the same thickness which the single tube has at its muzzle end.

b. The outer cast-iron casing is bored to the form of a true cylinder, or to that of a cone of a very fine taper.

c. A very minute amount of play is allowed between the coiled barrel and the cast-iron casing. This play is taken out by a setting-out charge, which expands the barrel into the cast-iron casing.

d. The flat end of the barrel is scraped to a surface to bear truly against the cast-iron breech, a slight play being allowed in the curved part at the end of the barrel to avoid its bearing on the corresponding curved part of the cast-iron breech.

e. The breech end of the barrel is closed by a cupped wrought-iron plug, screwed into the inner barrel, the threads on the inner barrel projecting beyond the general inner surface of the barrel.

f. The barrel is secured from working out at the muzzle by a screw collar, and is prevented from twisting in the casing by a screw, tapped through the casing and into the barrel.

g. The gun is vented with a copper bouch, passing through the cupped breech plug, and the old vent is plugged.

h. Grooves are cut outside the inner tube to convey away any gas to a small hole, tapped through the breech.

6. From the specification of Mr. Parsons, dated 19th May 1860, and the accompanying drawing, and his provisional specification of 13th July 1860, the following appear to be the leading features of construction then proposed by him:—

a. The barrel is a tube of wrought-iron, steel, homogeneous metal, or similar suitable material, and two or more tubes, fitting one into another, may be used in large guns.

b. The outer cast-iron casing may either be a gun with its original bore, or a gun re-bored cylindrical, or with a slight taper.

c. The barrel is turned to fit the bore accurately, and then forced into the gun by hydraulic pressure or otherwise.

d. Fitting the inner end of the barrel to the cast-iron breech by scraping is not contemplated, but a play is allowed in the fit of the curved part of the breech end of the barrel.

e. The plug by which the breech end of the barrel is closed is not cupped, nor does the thread of the screw project within the inner surface of the tube.

f. The drawing of the muzzle-loading gun has no screw collar to prevent the barrel from working *out*, but the drawing of the breech-loading gun has a screw collar to prevent the barrel from working *in*. No screw is proposed to prevent the barrel from twisting.

g. No vent is shown or described.

h. No grooves are proposed for the escape of gas.

The specification does not profess to deal with matters of minor detail.

7. Mr.

7. Mr. Parsons describes the leading principle of his system in his specification of 19th May 1860, in the following terms :—

* * * * * *

"The method of strengthening consists in fitting to the cast-iron gun an "internal tube of wrought iron, steel, homogeneous metal, or similar suitable "material. This may be done simply by preparing a tube of this kind, turned "on the outside to fit the present bore of the gun accurately, and bored and "rifled inside, and then forced into the gun by hydraulic pressure or otherwise, "or the gun may be re-bored slightly taper, and the tube made to correspond "externally, and then forced in * * * it being prepared of such "a size that the proper initial strain shall be put on it when in its proper posi-"tion.

* * * * * *

"The system I propose is * * * more suited to the purpose than "preserving the original bore of the gun, and putting on hoops outside.

"It is the interior of the gun that sustains the greatest shock. If this is of "cast-iron, it is strained beyond its elastic limit before the strength of the "hoops comes into play; but if the interior is wrought-iron, steel, or homoge-"neous metal, it will stretch before breaking, but the stretching consumes a "large portion of the force, and the remainder only is transmitted to the cast-"iron, and is imparted to it in a less sudden and more equable manner; the "cast-iron, in fact, has only to do surplus duty, and which in ordinary charges "would amount to scarcely anything."

8. Major Palliser does not explain the leading principles of his system in the specification of his patent of 1868. I therefore make the following extracts from the specification of his patent sealed in 1863 :—

"It is well known that the interior or bore of the gun has to sustain a far "greater pressure from the explosion of the powder than the parts more dis-"tant from the centre, and one of my objects is therefore to form the interior "of the gun of a stronger metal than the exterior thereof. To effect this object "I propose to cast a gun of iron, and then to bore the same with a slightly "tapering bore, whose diameter is largest at the muzzle, where I cut a few "threads of a screw; I then form a tube of twisted wrought-iron, the exterior "of which is tapered to fit tightly into the bore of the cast-iron body. This "tube is to be of such thickness, in proportion to its calibre, that the residuary "strain borne by this tube shall bear a ratio to the strain it transmits to the "surrounding cast-iron, which I have found most suitably proportional to their "respective co-efficients of expansion within the elastic limit. * * * "My general principle for the construction of ordnance consists in forming the "barrel of concentric tubes of different metals, or of the same metal differently "treated, so that as nearly as possible, owing to their respective ranges of elas-"ticity, when one tube is on the point of yielding, all the tubes may be on the "point of yielding. It thus differs essentially from the method hitherto preva-"lent of equalising strains on concentric tubes, by placing an initial or per-"manent strain on the exterior ones. Since the power of any substance to "resist an impulsive strain is measured by the product of the resistance it offers "while stretching into the distance through which it can stretch, and since the "interior surface of a gun stretches most, it will follow that an extensible sub-"stance at the interior of a gun will offer the greatest resistance to the impul-"sive pressure of the discharge, while it will evoke the greatest amount of "assistance from the exterior portions of the gun; I therefore make the interior "of the barrel of a tube of the most ductile wrought-iron, coiled round a "mandril, so that the grain or fibres of the iron may run circumferentially or "spirally," &c.

9. Comparing the above descriptions of principle, and the preceding descriptions of mode of construction, it will be observed that there are some strong features of resemblance, but several elements of difference; the relative importance of which it now becomes my duty to consider.

10. And first, it is right to remember that Mr. Parsons' specification and drawing do not affect to be complete in their details, but rather to give a general idea of his plan, while the specifications of Major Palliser have more elaboration, both in principles and in details.

 11. Again,

11. Again, all inventions are subject to development and progression, whether carried out by the inventor or by others, and this development might be illustrated by comparing Major Palliser's Treatise on Compound Ordnance, dated January 1863, with his patent sealed in 1868, and the drawing and specification by which the guns were made by Sir William Armstrong & Co., in 1868.

12. In regard to the general principle of construction, I am of opinion that there is a very important identity between the two plans, in the use of a barrel of wrought iron, steel, homogeneous metal, or similar suitable material, and placing such a barrel within a bored out cast-iron gun, in order to give the additional strength derivable from such a material. Major Palliser considers that to make such a tube do its full duty it should be made of a coil of soft iron, not fitting tightly, but expanded into the gun so as to be in tension, and not in compression; at the same time, he has proposed modifications of the barrel, in which steel would be used, in which case the barrel would require forcing into the cast-iron. The description given by Mr. Parsons of his process, in his specification of 1860, proposes forcing the barrel into the cast-iron gun, but does not define any special amount of compression to which the tube would thereby be subjected, nor indeed would it appear that he had developed that feature of the case, the description of the process having reference, I believe, rather to the production of a good fit than to any definite principle. Mr. Parsons did not specify in terms the use of a coiled iron barrel, but coiled iron was at that time in use for the construction of guns, and I think it may be fairly considered as included in the expressions "wrought iron, or similar suitable "material." Assuming for a moment that it is essential to the success of the plan, that the inner tube should not be a close fit into the cast-iron casing, but should be expanded to fit in a condition of extension, I think this is a feature which might naturally have grown out of the development of Mr. Parsons' plan, if fully worked out by competent persons.

13. Continuing the comparison through the details of construction, if the conclusions to which I have come in the preceding paragraph be correct, the differences which may appear in items *a*, *b*, and *c*, of paragraphs 5 and 6, although departures from perfect identity, would leave the features of identity farmore important than the features of difference. In item *d*, the omission by Mr. Parsons, of fitting the breech end of the barrel by scraping, cannot, I think, be regarded as an essential difference. Item *e* shows a difference in the form of the plug closing the breech end of the barrel. It will, however, be seen that in the drawing attached to Mr. Parson's patent, sealed in 1864, cupped breech plugs are shown, so that this feature may be regarded as a natural development. In item *f*, the omission of a screw for preventing the twisting of the barrel is unimportant, as such a detail would at once suggest itself when any movement was observed. The differences existing in items *g* and *h* are not of such a nature as to affect the general question.

14. After very carefully weighing all the features of resemblance and of difference between the two plans, I am of opinion that there is a large and material extent of identity in the two plans, that the leading fundamental principle is identical in both cases, and that the differences are on the whole of minor importance as compared with the identity, and that they are either differences of detail which might naturally arise from the same principle being worked out by different minds, or differences arising from the obviously provisional and general character of Mr. Parsons' original specification of 1860, and from Major Palliser's plan in 1868 being naturally more developed.

15. In concluding this Report, I venture to remark, that it is very natural that different inventors, having the same end in view, should hit upon principles greatly resembling one another, although acting entirely independently; and this investigation has led me to the conclusion that these two gentlemen have been engaged in following out their own views with honourable independence.

Whatever similarity there may be in the two plans, I should do an injustice to Major Palliser if I did not offer my testimony to the great amount of practical

tical knowledge, and scientific attainments, which mark his labours on the question which I have had under consideration.

I have, &c.
(signed) *Charles Hutton Gregory.*

To the Right Honourable Lord Northbrook,
Under Secretary of State for War.

APPENDIX TO REPORT.—(PAPER N.)

Mr. *Gregory* to Major *W. Palliser.*

Dear Sir, 1, Delahay-street, Westminster, 1 June 1869.

I HAVE been instructed by the Secretary of State for War to report my opinion as to the extent of identity, if any, which exists between the plan for the conversion of cast-iron smooth-bore guns into lined rifle guns proposed by Mr. Parsons in 1860, and your plan upon which a certain number of guns were converted for the Government in 1868.

In order to obtain in the clearest way what you may desire to say on the subject referred to me, I beg to invite you to send me a memorandum of your views *on the question of identity.*

I address a similar invitation to Mr. Parsons.

Assuming that you both send me such statements, I will request that they may be sent in duplicate, so that I may transmit a copy of each statement to the writer of the other statement, who would then have the opportunity of making a reply.

If either of you think that any other course would be preferable, I shall be happy to onsider any suggestion you may make; and if you should desire to meet personally before me, I shall acquiesce in such wish, although my impression is that the written statements I propose, may make the personal meeting unnecessary.

I am, &c.
(signed) *Charles Hutton Gregory.*

Mr. *Gregory* to Mr. *P. M. Parsons.*

Dear Sir, 1, Delahay-street, Westminster, 1 June 1869.

I HAVE been instructed by the Secretary of State for War to report my opinion as to the extent of identity, if any, which exists between the plan for the conversion of cast-iron smooth-bore guns into lined rifled guns proposed by you in 1860, and Major Palliser's plan upon which a certain number of guns were converted for the Government in 1868.

In order to obtain in the clearest way what you may desire to say on the subject referred to me, I beg to invite you to send me a memorandum of your views *on the question of identity.*

I address a similar invitation to Major Palliser.

Assuming that you both send me such statements, I will request that they may be sent in duplicate, so that I may transmit a copy of each statement to the writer of the other statement, who would then have the opportunity of making a reply.

If either of you think that any other course would be preferable, I shall be happy to consider any suggestion you may make; and if you should desire to meet personally before me, I shall acquiesce in such wish, although my impression is that the written statements I propose, may make the personal meeting unnecessary.

I am, &c.
(signed) *Charles Hutton Gregory.*

Major *Palliser* to Mr. *Gregory.*

Dear Sir, Army and Navy Club, 2 June 1869.

I BEG to acknowledge the receipt of your letter of yesterday's date. In accordance with your wish, I shall send you, with the least possible delay, my views upon the plans of

of conversion of cast-iron guns, to which you refer. I fully concur with you in the suggestions you have been good enough to make.

I am, &c.
(signed) *W. Palliser.*

Mr. *Parsons* to Mr. *Gregory.*

Dear Sir, Melbourne House, Blackheath, 2 June 1869.

I AM favoured with your letter of yesterday informing me that you have been instructed by the Secretary of State for War, to report your opinion as to the extent of identity, if any, which exists between the plan for the conversion of cast-iron smooth-bore guns into lined rifle guns proposed by me in 1860, and Major Palliser's plan upon which a certain number of guns were converted for the Government in 1868, and inviting me to send you a memorandum of my views *on the question of identity*; and, in reply, I beg to say that I shall be most happy to send in the memorandum you are so kind as to invite.

You are also kind enough to inform me of the course you propose to take in reference to the matter, which appears to me to be quite fair and proper.

I am, &c.
(signed) *P. M. Parsons.*

Mr. *Parsons* to Mr. *Gregory.*

Sir,

IN accordance with your invitation, of the 1st instant, to state my views on the question of identity between my plan of strengthening cast-iron guns, which I submitted to the War Office in 1860, and Major Palliser's plan upon which a certain number of guns were converted in 1868, I beg leave to direct your attention to the plan and specification of my invention which I submitted in May 1860, which will show—

Firstly.—That the object of my invention was to strengthen and render the ordinary cast-iron guns suitable for rifling and discharging elongated projectiles.

Secondly.—That the method by which this object was to be accomplished consisted of fitting into the interior of the gun a tube of wrought iron, steel, or homogeneous metal, the gun being bored cylindrical or slightly taper, and the tube being turned on its outside to fit the bore of the gun, and forced in by mechanical pressure (hydraulic or otherwise). The specification also further explained that by making the bore slightly taper, and the tube of suitable dimensions, the proper initial strain could, by forcing it in, be insured. The drawing also showed that the tube was to be closed at its breech end.

Thirdly.—That the principle upon which this increased strength would be gained was that, as the interior of the gun is subjected to the greatest strain, by lining the gun with a tube made of a stronger and more extensible metal than the cast-iron exterior, the tube will absorb or resist a large portion of the strain of the discharge, and in so doing stretch and bring the cast-iron into play, which would thus have to sustain only the residuary or surplus strain transmitted to it after the tube had done its proper amount of work. The specification also explained that another object which could be obtained by the plan was a reduction of the calibre, and that the longitudinal strength of the gun would be preserved.

I now beg leave to refer you to Major Palliser's pamphlet on compound ordnance, which he states in the preface is an enlarged edition of a paper he submitted to the Ordnance Select Committee (in 1862).

In that treatise, he states (page 5) that his object is to strengthen existing cast-iron guns sufficient to withstand the strains increased by the use of elongated projectiles, rifling, &c.

On page 6, he states that the inmost lamina of a gun has to bear the greatest strain, and on page 7, he says it follows that the inmost lamina of a gun should consist of substance whose tenacity is great, and whose limits of elasticity are large; and that his object is to prove this principle and explain a method of practically applying it. He then (Chapter 1) quotes various experiments showing that wrought iron, steel, and homogeneous metal are stronger and more extensible than cast iron, and he states (page 15) that the manner in which he proposes to satisfy the conditions already enunciated, is by introducing into the cast iron gun a barrel or hollow cylinder of coiled wrought iron of such a thickness, in proportion to its calibre, that the residual strain borne by this tube shall bear a relation to the strain it transmits to the surrounding cast iron which shall be most suitably proportioned to their respective elasticities. He also states (page 16) that he relies on the cast iron to do nearly all the longitudinal work, and he proposes (pages 16 and 17) the mechanical method of adjusting the initial strain by making the bore of the gun and the outside of the tube slightly taper, and forcing it in the requisite amount. Major Palliser's drawings show the breech end of the lining tube closed, and he adopts a reduced calibre.

I now

I now beg to consult the specification and drawing under which the guns were converted for the Government in 1868, and to examine the guns themselves, and if, as I understand to be the case, these guns are made according to the plan generally received as Major Palliser's, and recommended by the Ordnance Select Committee, you will find that they were bored cylindrical or slightly taper, and that the tubes were made of wrought iron, steel, or homogeneous metal, were turned on their outside, and were forced into the gun by mechanical pressure; that the tubes were closed at the breech end, and that these guns acquire the increased strength which fits them for rifled guns, in consequence of such combination of the materials upon the principles I submitted to the Government, and proposed the practical means of carrying into practice in 1860.

I therefore submit—

Firstly. That the object was the same as mine.

Secondly. That the theory and principles upon which that object has been obtained, are the same as I discovered and expounded; and

Thirdly. That the means adopted of applying those principles and reducing the theory to practice are identical in all their essential features with my invention which I submitted to the Government in 1860.

Having thus, as I conceive, established the identity of the two plans, I further submit that it is quite immaterial in what way the tubes were constructed so long as they were of the materials specified and answered the purpose intended, or what modifications or additions were made in the details, as these are only secondary matters, having nothing to do with the main and essential principles and merit of the invention.

In further proof of the actual identity of my invention of 1860 with that now adopted, I beg leave to refer you to the Minutes of the Ordnance Select Committee, and to suggest that you will, in connection with the proceedings recorded therein, receive explanations from Colonel Campbell, R.A., Superintendent of the Royal Gun Factories, Mr. Anderson, who was Assistant Superintendent, and Mr. Frazer, by which you will be able to trace clearly the connection of my original proposal with the system adopted, and that it was in consequence of the success of experiments with guns strengthened under my proposal before Major Palliser appeared, together with his subsequent experiments, that the invention became ultimately adopted into the service.

I am, &c.

Blackheath, 7 June 1869. (signed) *P. M. Parsons.*

Major *Palliser* to Mr. *Gregory.*

Dear Sir, Army and Navy Club, 11 June 1869.

WITH reference to your letter of the 1st instant, I beg to send you the following statement, which I have divided into three heads:—1st. The principles which have guided my proposal for the conversion of cast iron guns. 2nd. The mechanical arrangements by which these principles have been applied. 3rd. Remarks upon the plan proposed by Mr. Parsons in 1860.

PRINCIPLES.

1. Boring up the cast-iron gun to the size which renders its strength, as a casing, a *maximum.* This principle includes longitudinal, as well as transverse strength, and both conditions are satisfied when the casing is bored up until the thickness of metal which remains round the seat of the charge is equal to the radius of the new bore. This degree of strength is independent of the thickness, as well as of the strength of the interior barrel, and, with reference to the transverse strength of the casing, depends upon the following theory, which I proved in my "Treatise on Compound Ordnance," submitted to the Ordnance Select Committee, in November 1862, viz.:—"If it were possible to remove "the iron from the interior of a gun of 6-inch calibre and 10 inches thickness of metal,* "and replace it by an incompressible substance which offers no resistance whatever to "extension, the gun would be as strong with only three inches of iron as it was with 10 "inches, and with 6½ inches of iron (*i.e.,* when bored up to 13 inches) it would be stronger "than with 10 inches in the proportion of about 7 to 5."

The degree of longitudinal strength depends upon the theory "that the metal at the "interior surface of a tube or casing of cast iron will not support a longitudinal pressure "on the square inch, which exceeds the strength per square inch of cast iron, no matter "how great the thickness of the tube may be, even were it infinitely thick. If you enlarge "this internal area, it will still support the same pressure per square inch, and therefore "it will support a greater *total* pressure. I, of course, assume that the inflamed gas "acts only on the original area, viz.:—the end of the bore of the gun. I think that the "practical results of my experiments have thoroughly established the truth of this law."

Again,

* The external diameter of this gun, 26 inches, is about the same as that of the 68-pounder of 112 cwt.

Again, "the longitudinal strength of the cast iron has a mechanical advantage over the "action of the powder in exact proportion to its area and the area of the end of the bore "of the gun on which the powder acts." (Answers 203 and 224 in my examination before the O. S. Committee. *See* "Report on Coiled Wrought-iron Inner Tubes for Ordnance." Printed for Parliament, 16th March 1868.)

2. The employment, for the purpose of strengthening the bored-up casing, above described, of a comparatively thin lining composed of a material of low elastic strength as compared with its ultimate strength—*i. e.*, a material possessing a wide range between its limits of elasticity and rupture, and the definite and specific proposal to employ the softest and most ductile wrought iron welded into a twist or coiled barrel, so that the fibre of the iron might lie in a circumferential direction, as satisfying this requirement. The comparative thinness of the strengthening tube is based upon the following theories which refer to the gun, the dimensions of which are given in Principle 1:—"The mere substitution of "one inch of wrought iron for an inch of cast on the interior considerably more than "doubles the strength of the gun." "If we enlarge the bore up to 13 inches and then "line it with wrought iron 1½ inches thick . . . . the gun's strength is nearly doubled, "although its calibre is increased from 6 inches to 10 inches."—(*Treatise on Compound Ordnance.*)

3. Placing *no initial strain whatever* upon the cast-iron casing on account of the *very narrow* range between the limits of elasticity and rupture possessed by cast iron.

4. Relining the strengthened casing, described in Principle 2, with a thin tube which is employed (*a*) for carrying the longitudinal cuts called "rifle grooves," in order to prevent the strengthening tube from being weakened by such groove, and thereby enabling the lined casing to retain the full strength of a smooth-bore gun; and (*b*) to protect the strengthening tube from what is technically termed "guttering," that is, from being eaten away into deep longitudinal fissures by the action of the fired gunpowder in continuous firing. A single thick tube would commence to split quite as soon as a thin one, and once a crack commences, very few rounds are sufficient to extend it through the thick tube, in which case the gun would burst with violence as soon as the single tube was split through.

5. Making this rifling-carrier very thin, so that when it splits under the effect of continuous firing, the fracture must be stopped before it becomes deep, and thus the gun will not burst. The value of this principle was demonstrated by the trial of my 7-inch gun converted from a 68-pounder, which continued its trial, 1864–65, from the 750th to the 800th round with a split inner tube or rifling-carrier.

6. Expanding the inelastic but ductile tube out against the casing.

Remarks.

It is obvious that additional strength is conferred by making the rifling-carrier of a coi ed wrought-iron tube; but this is not essential to my plan, since, in accordance with the principle above stated, the strength of the gun must be made sufficiently great to resist the strains of firing quite independently of the inner tube.

I have omitted the proofs of these principles in the belief that they are not required; I should, however, have much pleasure in furnishing them should you require me to do so.

Mechanical Arrangements.

The cast-iron gun is bored up cylindrically; the 68-pounder to 13 inches, and the 8-inch shell gun of 65 cwt. and the 32 pounder to 10·5 inches. The exterior diameter of 68-pounders (1 and 2) at the seat of the charge are respectively 26·5 and 25·34 inches; those of the 8-inch shell gun and 32-pounder are 22·3 and 20·75; a slight departure is thus made from the exact size of bore which, theoretically, confers a maximum strength in order that the same boring heads and barrels may be employed for guns of approximate dimensions.

2. Forming a barrel composed of two coiled wrought-iron tubes; the inner tube (in 64-pounders) being ·8 of an inch thick, and the outer or strengthening tube 1·3 inches thick. In the 68-pounder, converted into a 7-inch rifled gun, the inner tube or rifling-carrier is 1 inch thick, and the outer tube 2 inches thick.

3. Turning the barrel cylindrically on the outside to a smaller diameter than the bore of the casing, so that it can be freely inserted and taken out of the casing. The objects of this arrangement are to prevent any initial strain from being placed on the cast iron, and also to make certain that the tube is home, and that it abuts properly against the end of the cast-iron casing. The breech end of the tube is rounded off to a slightly greater radius than that of the end of the casing, so that the centre parts only are in contact. The end of the casing is smeared with paint, and the tube is turned round inside. The tube is then taken out, and those parts which bear too hard are eased down. In this manner a uniform bearing is obtained over the required amount of surface at the end of the tube. This is a matter of great importance. When tubes are forced or shrunk into guns, a false end, or breech-plug screwed in from the rear, becomes necessary, in order that

that it may, in a similar manner, be faced against the end of the tube by screwing it out and back again.

4. A female screw thread is cut out of the cast-iron casing at the muzzle, and a screw collar, turning freely round the reduced end of the tube, screws into the casing. Were it not for this arrangement the effect of heavy firing would be to compress the soft iron unduly, and cause it gradually to squeeze out of the muzzle of the gun. The interior bearing surface of the collar is rounded off to fit a corresponding shape upon the bearing surface of the tube. A "setting out" charge is fired from the gun; the effect of which is to expand the loose tube up to the cast-iron casing round the seat of the charge, and also to squeeze the wrought iron forward. The rounded portion of the tube becomes in this manner jammed into the screw collar, and thus vibration is prevented, which, experiment has shown, would otherwise crack the loose tube in the muzzle of the gun. An iron pin is screwed through the chase of the gun a short distance into the tube, and prevents the side pressure of the projectile upon the spiral grooves from turning the barrel inside the gun.

5. For the sake of economy, the outer or strengthening tube described in Principle 2, is only employed for a limited distance from the breech end, namely, a short distance beyond the point where the strain of the discharge is considerable, and beyond the distance to which the scoring caused by "guttering" extends.

6. The breech end of the barrel is closed by means of a cup through which the vent enters the gun. This cup screws into a female thread, which is formed in relief inside the barrel. The object of the cup is to further strengthen the gun at a point where it is seriously weakened by being pierced by the vent hole, and to transfer the cracks which eventually radiate from the vent after repeated discharges from the barrel to the cup. The object of making the female screw threads in relief inside the barrel is to prevent the action of the powder from tearing the barrel across round the last complete turn (towards the muzzle) of the screw thread. This would inevitably occur if the female screw thread were a *minus* thread, *i.e.*, if it were cut *out* of the barrel. The cause of this phenomenon would require too long a description. Suffice it to say, that the principle is the same, though the converse in application, as that of the screw bolts with *plus* threads, proposed by me and adopted into the service for the attachment of armour plates. Further, this relieved female thread has on my proposal been adopted into the breeches of all the wrought-iron muzzle-loading guns in the service.

7. Forming a spiral channel round the thin interior tube, communicating with the indicator hole through the breech of the gun for the purpose of giving warning by an escape of gas, when the tube splits.

Remarks.

Boring up the 68-pounder and 32-pounder to the amount specified, reduced the thickness of metal at the muzzle, in the casings respectively to 1·27 inches and ·96 inch. It was generally expected that the concussion of firing would have cracked the metal there; I had, however, by private experiment, satisfied myself that such would not be the case. Mr. Parsons states, in his letter to the *Army and Navy Gazette*, 1st May 1869, that "boring up the cast-iron gun to any particular point involves no new principle."

Before proposing for introduction into the service the thin rifling-carrier previously alluded to, I converted two guns at my own expense, and Government tested one with increasing charges and the second by long continuous firing.

Subsequently I tested a gun with the spiral channel round the thin tube. Many people expected that this arrangement would lead to serious evils. The Royal Gun Factories at first reported unfavourably of the proposal.

Sights used formerly to be attached to the outside of cast-iron guns by means of small screws, as it was thought too dangerous to cut large holes into the cast iron. My guns contain their back sights in a large hole drilled through the breech; but before I proposed this convenient arrangement, I tested by continuous firing, at my own expense, a gun the sights of which were so fitted.

For the sake of economy, I dispensed with the screw collar in a gun of comparatively small calibre—viz., a 64-pounder—converted from a 32-pounder; a few rounds, however, demonstrated how absolutely necessary the arrangement was, and the gun had to be returned to the factory, and to be fitted with the collar in question.

The cup was also tried by me at my own expense; the first form was too conical, and caused the gas to eat a hole into the iron at the end of the bore, and I had to send the gun back, at my own expense, from Shoeburyness to Newcastle-on-Tyne, to have the form of the cup altered to the shape adopted. I mention these facts—the truth of which can be established by reference to the printed Minutes of the Ordnance Select Committee—to show how each detail in a structure which is required to withstand the effects of the repeated strains of fired gunpowder and elongated projectiles, and upon the safety of which the lives of officers and men depend, must necessarily become the subject of costly experiment, and I submit that these details acquire in consequence the importance of distinctive features.

Mr. *Parson's* Proposal of 1860.

Mr. Parsons did not propose to bore up the gun to an increased diameter, but only to remove sufficient metal (about ⅜ths of an inch) round the seat of the charge to enable the cutter to make the bore taper, and to force in by hydraulic pressure a correspondingly tapered tube, "of such size that the *proper initial strain shall be put on it* when in its proper position." He specified several natures of tubes, but did not allude to a coiled wrought-iron tube.

I may mention, that about the date of Mr. Parsons' proposal the manufacture of coiled tubes for inner barrels of wrought-iron guns had been abandoned in the Royal Arsenal, and that inner barrels were formed from what was termed a solid forging, viz., they were made by welding a series of circular blooms together, and drawing them down under a steam hammer into a large bar, which was subsequently bored out into a tube. It was supposed that this mode of manufacture would confer a strength of 20 tons in each direction, while the coiled tube gave a strength of 25 tons in the transverse direction and a strength of 12 tons in the longitudinal direction. This change was adopted in consequence of the extraordinary difficulties encountered in the manufacture of large coiled wrought-iron barrels. In fact, two guns which were converted in the Arsenal during 1861 were both lined with solid forged barrels. The cause of the difficulties in manufacture was due to the employment of the best strong Yorkshire iron, which was steely in quality and would not weld properly. This class of iron was considered necessary to resist the crushing force of the powder and prevent bulging. My proposal, however, of employing the softest and most ductile iron has removed all these difficulties.

Mr. Parsons shows, in Drawing 2, a breech-loader in which the whole longitudinal strain of the discharge is borne by the tube alone; his calculation of the longitudinal strength of this tube proves that he did not intend this tube to have been a coiled tube, and since he made no reference to any distinction between the tubes for the Drawings 1 and 2, there is circumstantial corroborative evidence to show that a wrought-iron welded, coiled, or twist barrel was not included in his general proposal to employ an internal tube of "wrought iron, steel, homogeneous metal, or other suitable material."

A minus female thread is shown in the breech of the tube.

The proposal to place initial tension on the cast-iron casing, is similar to the various plans which had been patented during the six years immediately preceding 1860, and essentially differs in principle from the plan upon which my guns are converted.

I now propose to prove that the general question of strengthening cast-iron guns internally was not new at the date of Mr. Parsons' proposal.

The following letters will show the early date at which I commenced my experiments in connection with the general question, and Mr. Adams' letter shows the date at which I commenced my experiments of introducing coiled wrought-iron barrels into guns already cast. Mr. Adams recommended shrinking the tube into the gun, but I tried to screw it in. The difficulties experienced in doing this led to my adopting the screw collar round the muzzle of the tube.

No. 1.

Gun Manufactory, 233 High Holborn, W.C.,
24 February 1866.

Sir,

I beg to hand you the statement of the pieces of barrel I have rifled for you for insertion into cannon, and of the blasting fuze and cartridges, &c., I made for you at the time. I am prepared to state that I understood from you that you wanted me to procure and rifle you pieces of gun barrels, for the purpose of inserting in cannon, and that I rifled you three or four pieces in 1854.

I have, &c.
(signed) *John W. P. Field.*

No. 2.

Major *Palliser*, bought of *Parker, Field,* & Sons.

1854.	
July 26.	Rifled a barrel twice.*
Aug. 1.	Powder magazine.
	Coil of fuze.
2.	Rifled a musket barrel.
	1 lb. powder.
11.	1 lb. powder.
17.	1 lb. powder.
Sept. 22.	1 coil blasting fuze.
	Rifled a barrel.
Oct. 5.	3 lb. powder, T.P.
7.	1 lb. " "
	3 yards blasting fuze.
20.	3 lbs. powder.
	5 yards fuze.

The above is a correct extract from our books.

(signed) *John W. P. Field,*
For *Parker, Field,* & Sons.

Feb. 26, 1866.

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* These barrels were all twist barrels, similar to what are termed, on a large scale, coiled barrels.

No. 3.

W. Palliser, Esq. to *S. H. Seager*.

108, St. Martin's Lane, W.C.,
20 October 1854.

1854.		£.	s.	d.
Oct. 20.	To making in oak a large-size model ship's gun carriage, complete - -	2	1	9
31.	To making in oak a large-size model of field-piece carriage - - -	5	6	3
		£.7	8	0

The above is a correct extract from our books.

July 14, 1866. (signed) *T. T.*, for *S. H. Seager*.

No. 4.

Sir, 15, Gate-street, Lincoln's Inn Fields.

On referring to our books, we find that we finished turning a model cannon for you on the 10th November 1854 The cannon was of cast iron, cast over an internal tube of wrought iron.

We are, Sir, yours faithfully,
Clark & Co., Engineers.

Captain *Palliser* to *Clark & Co.*

1854.		£.	s.	d.
Nov. 10.	To turning and finishing a cannon, painting, &c. - - - - - - -	2	2	-

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No 5.

I, Charles Moritz, engineer, do hereby certify that I finished turning this gun for Captain Palliser on or before the 10th of November 1854; and I can also identify the gun, both by the pattern and by having filled up with lead some blow holes caused by faulty casting. The gun is made of cast iron, cast over an internal tube of wrought iron.

Signed, 17th day of September, 1863. *Charles Moritz.*
39, Lamb's Conduit-street, W.C.
Witness, Edmund Taylor, 7, Russell-terrace, N.W.

No. 6.

British Museum, 26 May 1866.

My dear Palliser,—I have much pleasure in stating that, during the year 1854, you were living with me in my chambers at 13, Gate-street, Lincoln's Inn Fields, and that, during the summer and autumn of that year, you were occupied in making small guns, by casting the barrels over a central tube of wrought iron. On one occasion, in the beginning of October, I went with you to Erith and witnessed some of your experiments with them. Towards the end of November 1854 you left me, and went to Dublin.

I am, &c.
(signed) *Wm. S. W. Vaux*,
Keeper of the Coins and Medals, British Museum.

Major Palliser, &c.

No. 7.

Dear Sir, 76, King William-street, 17th September 1863.

In reply to your note, I beg to state that I have the clearest recollection of calling on Mr. Parsons, by your request, to make an appointment, for you to see him for the purpose of ascertaining if his and your improvements in ordnance at all interfered with each other. On my explaining to Mr. Parsons that I had been engaged in carrying out the strengthening of cast-iron guns with wrought-iron interior tubes for you as early as 1857, he replied that his improvements were of a different kind, and consequently did not interfere with yours, and that he intended to abandon any further prosecution of his plans in that direction.

I remain, &c.
(signed) *Robert Adams.*

Captain Palliser.

Subsequent to the date of my earliest experiments, several patents were taken out with the same general object. The first of these was that of Mr. W. B. Adams, who, on the 20th of November 1854, states, in his provisional specification, "Cast-iron guns are of very brittle material; the vents rapidly burr out in use, and the internal compression of the metal honeycombs it by the explosive action; consequently, whatever be the bulk of the material, rapid internal destruction must ensue, increasing with the rapidity of the discharges. My improvement consists in forming the interior of the gun of a wrought-iron tube, hermetically joined at one end, and of as great thickness as can conveniently be attained, and casting iron, brass or gun metal, or other metal, round it, forming, as far as possible, a union by means of chemical fluxes. * * These tubes may be hooped round with two or more rings of wrought iron, shrunk on hot, and interlocking with each other." Mr. Downie took out a patent on the 22nd December 1854, for a similar plan. He says, "Very superior strength is secured in guns of this class, as the central wrought iron can be forged with perfect solidity and bored with great accuracy,

"whilst the external cast-iron casing forms an efficient binder for strengthening the "piece."

On the 31st May 1855, Mr. Wharton took out provisional specification for improvements in ordnance, "the object being to render them more durable, or less liable to wear "than those of ordinary construction, and consists in forming the bore of ordnance with "steel, by lining them with a steel tube or cylinder." He then describes a method of casting metal round the tube, and adds, "ordnance can also be lined by forcing in these "steel tubes or cylinders by hydraulic pressure or other means."

Mr. Haddan's patent of the 14th August is so remarkably similar to that of Mr. Parson's that I place them alongside of each other.

HADDAN'S PATENT. 14 August 1855.	PARSONS' PATENT. 13 July 1860.
I bore or plane out the interior of the body of the cannon of a cylindrical or slightly tapering circular form, and turn or plane the exterior of the tubular lining to be inserted, which may be of wrought iron, or steel, or brass, or gun metal, to a corresponding shape, so that it may fit tightly within the body of the cannon when it is heated, and the lining is cool, so that the body of the cannon may shrink upon and hold the lining securely.	I form an outer shell or casing of cast iron, which I bore out cylindrical, or slightly conical, and force into it a tube of wrought iron, steel, homogeneous metal, or other suitable metal or alloy, turned to fit the interior of the cast-iron casing.

The principle of internal strengthening having been previously clearly pointed out by Messrs. Adams and Downie, the only difference between Mr. Parsons' specification, and that of Mr. Haddan consists in his having specified hydraulic pressure in accordance with Mr. Wharton's specification, as a means of placing initial tension on the cast-iron.

I may here state, that at the time I had worked out my system of converting guns, I had no idea that the general question had meantime been taken up by anyone, and the first intimation that I received of any patents having been taken out was from Mr. Parsons himself, in his letter of the 21st of September 1863, to the "Morning Post," in which he says, with reference to his patent of 1862:—"It is quite true that I disclaim in my "patent the use of lining cast-iron guns *per se*; that has been known, proposed, and tried "years and years ago by Krüpp, Adams, Wharton, Haddan, Downie, and a host of "others, and if Captain Palliser thinks he can establish such a broad claim for an old "thing, I fear he must have been very badly advised by his patent agent. "On this "account I disclaim it in my patent, and confine myself to the method I have invented "for doing it."

I would call your attention to the fact that, with the exception of Herr Krüpp's patent, which has no connection whatever with the subject, and whose gun (as described in his patent) burst at Woolwich at the first round, my early experiments upon the general principle were made before any patent connected with it was taken out.

In a letter which Mr. Parsons addressed to the "Mechanic's Magazine," on the 25th October 1865, he says that he "did not mention any particular kind of tube in his speci-"fication of 1860, as I never contemplated claiming that particular combination as a "speciality. *This I could not do,* nor can Major Palliser, *for it has already been done* by "Mr. J. C. Haddan, in his patent of the 8th August 1865."

It thus appears that not only was the question of internal strengthening not new at the time Mr. Parsons proposed it, but that he was himself aware that the plan he proposed had been included in the provisional specifications and patents of previous inventors.

As Mr. Parsons has repeatedly laid claim to a 68-pounder which was converted in the Royal Arsenal during the year 1861, I may mention, first, that the gun in question was bored up cylindrically to a calibre of 11 inches; and, secondly, that the tube was shrunk into the gun, in accordance with Mr. Haddan's patent, and not forced in by hydraulic pressure; and, third, that the barrel was made from a solid forging, and was not a coiled tube.

To sum up, I maintain (1) that I was the first to grasp the value of the general question of internal strengthening, and to make experiments upon it; (2) that Mr. Parsons became aware of its importance in 1860 by the light thrown upon the subject by the patents above alluded to, as well as by the failures of all the numerous attempts which at that time had been made in strengthening cast-iron guns externally, and that he pressed the general question, with great energy and ability, upon Government; (3) that the particular plan which he proposed for carrying out the principle was not new, and that it differed essentially from the one which I worked out by long, careful, and expensive experiments, and which is now introduced into the service.

I am, &c.
(signed) *W. Palliser.*

P.S.—I forward herewith the patents to which I have referred.

Mr. *Gregory* to Mr. *Parsons*.

1, Delahay-street, Westminster,
16 June 1869.

Dear Sir,

I ENCLOSE herewith copy of a statement received from Major W. Palliser, and, in accordance with the arrangement already proposed, I shall be obliged by your sending me, in triplicate, at your earliest convenience, any observations which you may have to make in reply, bearing upon the question of identity referred to in my letter of the 1st instant.

I am, &c.
(signed) *Charles Hutton Gregory.*

Mr. *Gregory* to Major *Palliser*.

1, Delahay-street, Westminster,
16 June 1869.

Dear Sir,

I ENCLOSE herewith copy of a statement received from Mr. P. M. Parsons, and, in accordance with the arrangement already proposed, I shall be obliged by your sending me, in triplicate, at your earliest convenience, any observations which you may have to make in reply, bearing on the question of identity referred to in my letter of the 1st instant.

I am, &c.,
(signed) *Charles Hutton Gregory.*

Mr. *Parsons* to Mr. *Gregory*.

Blackheath, 22 June 1869.

Sir,

IN reply to the statement of Major Palliser, dated 11th June 1869, on the question of identity between my invention of 1860, and that of his upon which guns were converted for the Government in 1868, I observe that—

Major Palliser now omits to lay claim to the chief and essential features of the invention as explained by him in his pamphlet of January 1863 (*see* pages 5, 6, 7, 15, 16, and 17), and by me in my specification of 19th May 1860, viz., the principle of strengthening cast-iron guns by the application of a lining tube made of a stronger and more extensible metal than the cast iron so fitted into the gun that it will resist the greater portion of the strain, in so doing stretch and transmit to the cast-iron casing the residuary or surplus strain after the tube has done its proper share of the work, and I submit that Major Palliser having thus abandoned this, the main and essential principle of the invention, is a tacit admission on his part that he could not maintain it in the face of my prior specification, and an additional proof of the identity of the two plans as set forth in the statement I forwarded to you on 7th June last; and further, Major Palliser has advanced nothing in his statement to show that the guns made in 1868 were not on this principle, but on the contrary, his general description confirms the fact of their having been so made.

The principles which Major Palliser now describes are really no principles at all, but certain mechanical details of construction adopted by him for carrying out the principles I first propounded and elucidated, and he subsequently adopted as the substance of the invention; thus under the head of principles, his—

> Claim 1st. Boring up the gun to a size which will make the thickness of the metal equal to the radius of the bore, and which he considers gives a maximum strength; does not involve a new principle; it is simply a question of proportion of parts, and Major Palliser shows what little importance he really attaches to it, for in not one of the guns described by him does he adhere to this proportion.

Then, in the next paragraph, he propounds a well-known theory, which simply shows that guns made on the plan first proposed by me, and susequently by him, possess ample longitudinal strength, which I previously pointed out they would.

> Claim 2nd. The materials named by me in my specification of 19th May 1860, meet the requirements stated in this claim; comparative thinness is a vague term, and besides, the thinness or thickness of a tube has nothing to do with the principle, but is simply a detail of dimension.

Claim 3rd. "Placing *no initial strain whatever* on the cast-iron casing" does not accord with Major Palliser's original proposal, in which he explains the necessity in some cases of applying an initial strain (*see* page 17, line 4 to 10, and page 23, line 1 to 4 of his pamphlet), and in my specification of 19th May 1860, I stated that my invention consisted in fitting to the gun an internal tube, and I was at perfect liberty to make any kind of fit I pleased, and should undoubtedly have made such a fit (loose or tight) as I considered most suitable, and I proposed both to make the tube fit the cylindrical bore accurately, in which case there *could be no initial strain*, and I also provided a means, by making both slightly taper, to give *any initial strain* that might be required, the amount of which would range from none at all up to the greatest that could be obtained by hydraulic pressure in a precisely similar manner to that afterwards specified by Major Palliser, so that my intention was clearly indicated to adjust the fit of the tubes to such a *suitable* degree of tightness or looseness that they could under strain satisfy the theoretical conditions explained, and it was impossible to specify generally any particular degree, as this would be governed by a variety of circumstances, such as the proportionate diameters of the inside and outside of the tube, as well as the casing, together with the qualities of the metals composing them respectively, and it was therefore a matter of detail which could only be properly settled when the working designs for the guns were prepared and the work was in the course of execution.

Claim 4th. "Relining the strengthened casing with a thin tube" is simply another way of describing a double lining tube. This I proposed in my provisional specification of 13th July 1860, No. 1687.

Claim 5th relates to the preceding, and requires no further comment.

Claim 6th. "Expanding the inelastic but ductile tube out against the casing." I know of no inelastic metal; even lead has some degree of elasticity; but whether or not, if the tube be expanded out against the casing, some initial strain will be set up, and it would then be under one of the conditions provided for by me. This method of producing an initial strain would only be another mode of effecting the object than the use of hydraulic pressure proposed by me, but I did not confine myself to this mode, for I specified "hydraulic pressure *or otherwise*," and, moreover, this setting out of the tube if fitted into the gun as I proposed would take place in the ordinary course when the gun was fired, and did take place in the guns made in the Arsenal under my proposal, before Major Palliser submitted any plan.

Mechanical Arrangements.

I find that in carrying out the work, Major Palliser has adopted certain details which were not actually described or shown in my specification and plan of 19th May 1860. These consist chiefly in the use of a double tube before alluded to, making the tube of coiled wrought iron, the use of a screw collar at the muzzle, and an improved form of plug for closing the breech end of the tube. These details do not, I contend, in the least affect the general principles of the invention before explained; they simply represent Major Palliser's notions as to the mode of carrying them into practice, and in some shape or other would naturally result from his having been intrusted to carry out the experiments and gaining experience therefrom; and with these observations I might safely dismiss them, but as Major Palliser appears to look upon these details as constituting essential principles of the invention, I think it desirable to submit a few observations for your consideration.

I beg leave first to direct your attention to the concluding paragraph of my specification of 16th May 1860, in which I say "There are many points of minor detail which "would render this description too voluminous to specify, but these I have well con-"sidered, and should be happy to enter into the matter more fully personally, and I doubt "not be able to meet any objections that might be urged against the plan." This statement was made under the belief that if the invention were tested, the usual course would have been pursued towards me, and that I should have been called upon to carry out the practical details of my own invention, and upon the further assurance contained in the printed circular of 13th October 1859, No. 491, forwarded to me when my offer to submit the plan was accepted, which states "*inter alia*" (paragraph 7) that "before any experi-"ments are undertaken by the Ordnance Select Committee, they will apprise the inventor "of the time and place of so doing," and my plan and specification was in consequence only designed to illustrate the general principles of my invention in a sufficiently clear and practical manner to enable its merits to be fairly judged, to be taken in conjunction with explanations I was prepared to give personally, and to be carried out under my superintendence and inspection.

This opportunity of giving personal explanations, and of carrying out my own invention, was not, contrary to precedent, afforded me; if it had been, I affirm it was my intention to have employed, as one of my arrangements, a double tube, and in proof of this I beg to refer you to the provisional specification of the patent I commenced for the invention, dated 13th July 1860, No. 1687, in which you will find these words, page 1, line 11: "In some cases for heavy guns I employ, besides the inner tube, an additional "tube

"tube of any suitable metal or alloy, bored to receive the inner tube, and turned to fit the "interior of the shell or casing, &c." But even if my intention were questioned, I submit that Major Palliser could hardly claim as a new principle in 1863 an arrangement which I had published to the world in 1860. I also affirm that I contemplated using a coiled tube when wrought iron was to be the material employed. Coiled wrought-iron tubes were at that time being made and used extensively for ordnance in the Royal Gun Factories by Sir William Armstrong, Captain Blakeley, and others, and I was perfectly aware of their advantages; in fact, five years previous I commenced a patent for making guns on this principle, somewhat modified from that now in use (*see* my provisional specification, filed in the Patent Office, of 6th March 1865, No. 496), and I could never suppose that by my omitting to mention specifically a thing in open use, more than two years afterwards, it would be claimed as a new principle; moreover, if you consult the records of the Ordnance Select Committee and the Royal Gun Factories, you will find that the second gun, a 32-pounder, which was strengthened in the Arsenal, I believe, in 1861, under my proposal, *was ordered to be fitted with a coiled iron tube*, although it is now questioned if this order was actually carried out; but whether or not, this is immaterial, as it was at least known and proposed before Major Palliser submitted the plan. I therefore contend that Major Palliser cannot claim either the double tube or the coiled tube as his inventions, much less set them up as disproving the identity of my invention with that now adopted, for even had they been perfectly new, I still contend that their use would only amount to a particular mode of making the tube to be combined with the cast-iron gun in the principle I first proposed.

With reference to the screw collar, this is simply a detail added which is not essential, as was proved by the success of the two guns tested in the Arsenal, under my proposal, in 1861, which did not possess it. Many different arrangements can, if required, be applied to hold the tube at the muzzle; three studs screwed in would be a better and cheaper arrangement, as they would both keep the tube from turning, and hold it longitudinally, and would possess more than the strength of the casing at the muzzle, which is all that is requisite. This plan I applied with perfect success to hold the tube from turning in a gun I converted for the French Government.

With respect to the cup-shaped screwed plug at the breech end of the tube, this is a comparatively recent introduction, and was not employed until long after I had published it in the specification of my patent, dated 17th November 1863, No. 2876, to which I beg to refer you, page 3, line 2 to 6, and page 9, line 27 to 33; putting the vent through the cup may be an improvement, but that also was shown in one of my drawings, Fig. 9.

I beg now to add a few remarks upon the question of the tight or loose fit of the tube, together with the use of hydraulic pressure proposed by me in in my specification as a means of forcing the tube into the gun, as Major Palliser seems to assume that it must necessarily mean a very great force, and that I intended in all cases inserting the tube with a *very high initial strain*, but nothing could be more erroneous or further from my intention, and this impression could not have arisen had the meaning of all the words of my specification been carefully weighed, and had the offer made by me to afford personal explanation been accepted.

The expression *fitting* the tube to the cast-iron casing, and turning the tube to *fit* the bore of the gun *accurately*, as before explained, altogether precludes such an intention, and are alone sufficient to show that such an impression is erroneous, for anyone must see that these words, taken in conjunction with the context, mean, and I intended them to mean, such a fit, either tight or loose, as would best carry out the theoretical principles expounded, and it is therefore inaccurate to assume that because I provided, *in addition*, a means of putting on an initial strain *when required*, that this was *alone* intended; besides this, I do not confine myself to hydraulic pressure, but, in naming it, say, "*or otherwise.*" This seems all to have been overlooked. In proposing hydraulic pressure, my intention was partly to meet what might possibly have been advanced as a practical difficulty, viz., the means of getting the tube into the gun with anything like an accurate fit, and because hydraulic pressure is generally resorted to by engineers, as it provides a ready means of applying force of any degree with certainty, and measuring it with accuracy, I foresaw that the mere *friction to be overcome* in inserting a tube, left as it would ordinarily be from the turning tool, and weighing a ton or more into the gun, also bored from the tool, would be considerable in a length of eight or nine feet, and a circumference of 29 or 30 inches, even with *an easy fit*, and that it would be necessary to employ still more force to insure its breech end taking a solid bearing on the end of the bore; and then I would draw your attention to the fact that, even with any amount of hydraulic pressure at command, it would only be *possible* to put on *a fractional amount of the initial strain that would be produced by heating and shrinking the gun into the tube* on account of the enormous friction to be overcome, and *the inability of the tube to preserve its form under the compressive force* to which it would necessarily be subjected.

To show this, I will take a tube of the dimensions; I happened to make it in the drawing I submitted in 1860, say 9¼ inches diameter and 5 inches bore, and suppose it to be inserted into the gun 110 inches, and had to be forced up the remaining 3 inches with the *greatest initial strain that could possibly be put on it.*

Now, wrought iron compresses with 10 tons per square inch very considerably, about ·001 of its length, and the cross area of the tube being 47 square inches, 470 tons would be the utmost pressure that could be applied without *upsetting* the tube, and consequently the greatest that could be applied as the tube would then bulge and stick fast; say that the

the friction would be one-fifth of the pressure against the surfaces; then, 470 tons representing the force requisite to overcome that friction, 470 tons × 5 = 2,350 tons pressure distributed over the surface of the tube or bore, and the tube having a surface of 29 inches circumference × 110 inches length = 3,190 square inches, the total surface, with a total pressure on that surface of 2,350 tons or $\frac{235}{319}$ tons, or barely more than two-thirds of a ton per square inch initial strain, which would be the *very utmost* that could *possibly* be produced by *forcing* the tube in.

If, on the other hand, the gun were heated and shrunk on to the tube, an initial strain of *six or seven tons*, or 10 times the amount would be put on it by making the tube only ·0015 of its diameter larger than the bore of the gun, and the gun would expand double this amount with an increase of temperature of 500°, but it would probably have to be heated three or four times this extent to get the tube in, and then the operation would be uncertain, as the gun could never be depended on for keeping straight, but from the nature of the material would warp and twist when heated, and this, no doubt, was the cause of failure in the attempt made to line the 68-pounder gun in this way subsequently referred to.

It will thus be seen that while hydraulic pressure will produce as great an initial strain as ever likely to be required with my system of construction, an injurious amount can never be put on the gun; and it can, moreover, be regulated with accuracy, neither of which could be insured by the plan of heating and shrinking the gun on to the tube, which Major Palliser confounds with my plan.

Major *Palliser's* Remarks on my Proposal of 1860.

Major Palliser's statement that I did not propose to bore the gun to an increased diameter is incorrect, for I proposed either to use the original bore or to re-bore the gun.* The increased diameter I showed in the original drawing, which I have carefully measured, was 9⅜ inches in the largest part, nearly 1½ inches larger than the original bore, but I cannot see how this affects the question at all, or how it can matter whether the gun was bored at one time or another, so that it was bored, and had a sufficiently true surface to admit of the tube being properly fitted. The dimensions given in my drawing were simply the result of the calibre I thought of first trying, and I neither claimed nor limited myself to any particular dimensions, and I could and should have adopted any that were most suitable.

I have previously answered the questions of initial strain and the construction of the tubes, and these require no further comment.

The question of breech-loading arrangement proposed by me not being under consideration requires no observation, but I may state that I dissent from Major Palliser's hypothetical conclusions respecting it.

Major Palliser next states that a *minus* female thread is shown in the breech of the tube; and I consider, if properly made, it is as good, if not better, than what Major Palliser terms a plus thread. I have employed minus threads for the breech screws in two guns; one fired 1,020 rounds, and was only burst at last on the chase by nearly half filling it with powder, and another 165 rounds with heavier charges than ever fired from any gun in proportion to its size, but the breech screws in both cases remained intact to the last, whereas two guns made on Major Palliser's plan, with plus threads, both failed by blowing out their breeches (*see* Ordnance Select Committee, Experimental Guns No. 220 and No. 247); and, after all, this is only a question of detail.

My proposal to place an initial strain on the cast-iron casing is not similar to any plan proposed before, as all previous ones depended on the gun being cast on, or heated and shrunk on, the tube; and the amount of strain could not by these means be properly regulated, and, as before shown, it would be excessive; but by my plan I provided means of adjusting the amount of the strain with accuracy, which no previous plan did, and with the object of adjusting the initial strain to carry out a new principle, which I was the first to elucidate and expound; and *Major Palliser in his pamphlet proposes precisely the same means to effect the same object.* (*See* pages 16, 17, and 23 of his pamphlet.)

I now arrive at the paragraph in which Major Palliser states that he proposes to prove that the general question of strengthening cast-iron guns internally was not new at the date of my proposal. I must confess this surprises me, as I understood that the discussion was to be strictly confined to the question of *identity* between my plan of 1860 and that of Major Palliser's of 1862, upon which guns were made in 1868, and I really cannot understand what gunmakers', carpenters', and engineers' bills, or certificates of casting model cannon over wrought-iron tubes have to do with the plan of lining *existing cast-iron guns* proposed by me; and I cannot see what any prior specifications for inventions of this kind, or for shrinking the guns upon tubes altogether different in principle, differently carried into practice with different objects from my invention and that now adopted into the service, and which I never claimed as mine, and never should have attempted to apply in practice from a certainty of failure, can affect the question of identity at issue; therefore

* In reboring the gun, the bore would ordinarily be slightly taper, simply from the wear of the cutter.

therefore, adhering to the instructions with which you favoured me, I pass over Major Palliser's remarks on these matters.

I think it necessary, however, to trouble you with a reply to the first and second paragraphs on page 10 of his statement;* the first I consider casts on me an unfounded imputation, and the second is inaccurate.

Major Palliser states that at the time I proposed my plan of strengthening guns, "I was "aware that it had been included in the provisional specifications and patents of previous "inventors," thus simply accusing me of having offered to the Government an old invention belonging to some one else, well knowing it to be old, and passing it off as a new invention of mine. I must say I feel surprised at such an accusation, and I indignantly deny the truth of it. In the first place not one of the plans referred to are the same as mine of 1860, and in the next place I never saw, nor was I aware of the existence of, any one of these specifications but my own of 1860, until more than two years afterwards, when, in consequence of the discussion which arose in the press between Major Palliser and myself in 1863 upon our rival claims to the invention, I had a search made for all the specifications in any way bearing on the subject, and it was only then that I became acquainted with them. My invention of 1860 resulted entirely from a careful study and long consideration of the subject, my attention having been drawn to it by the experiments that were made during several years previous, with guns strengthened by outside hoops, and the numerous failures that occurred with them; this, I think, is sufficiently clear from the comparison I make with such guns in my specification of 19th May 1860.

With respect to the 68-pounder converted in the Arsenal in 1860-61, which Major Palliser states I lay claim to, I beg to say that in doing so I only claim what is my own, for the Minutes of the Ordnance Select Committee will show that this gun was converted upon my proposal, and under my name, which appears in the printed minutes a few days after I sent in my plan and specification. Major Palliser only gives a part of its history, the remainder of which I beg leave to furnish.

An attempt was first made to insert the tube, as Major Palliser describes, by heating, and shrinking the gun on to it, at the recommendation, I believe, of Sir William Armstrong, but the tube stuck half way, and could not be moved, and had to be bored out, and, I believe, a similar failure occurred a second time; the tube was then turned to *fit* the gun, and *inserted in the way I specified, and no further difficulty was experienced*, and I believe Colonel Campbell, Mr. Anderson, and Mr. Frazer can confirm this. It was no fault of mine that this difficulty arose, as I was not consulted in the matter; had I been, I should not have allowed the gun to be heated, but should have carried out my own plan in its integrity in the first instance. Another gun, a 32-pounder, was afterwards lined on my plan, and both were tested before Major Palliser submitted any proposition to the Government. In 1863 the 68-pounder lined with a coiled tube in a precisely similar manner under Major Palliser's proposal was tested, and the Ordnance Select Committee, in making their report upon this gun, refer to the 68-pounder previously strengthened under my proposal of May 1860, and say of it (*see* Report No. 2,955, 10th August 1863), that it endured 71 rounds which exceeds all but one of the unstrengthened 68-pounders, and all the 68-pounders strengthened externally, and having been reduced to a calibre of 6·5 inches, it underwent a strain probably more than proportioned to the greater thickness of the metal as compared with the 9-inch gun (Palliser's), and the Committee in consequence recommend further experiments, and in Minute 10,712, 30th December 1863, and Report No. 3,139, 6th January 1864, the Committee give a list of lined guns, tested up to that date, viz.: the 68-pounder which endured 71 rounds, the 32-pounder 74 rounds, both under my proposal; the 68-pounder, 9-inch calibre, 107 rounds; another 68-pounder one round; and a 10-inch gun 81 rounds, under Major Palliser's proposal, and upon this the Committee consider internal lining far superior to external hooping, and that the strength of the cast-iron gun is greatly increased thereby, and further experiments are made, the whole of which are continued down in one connected series commencing with my proposal of 1860, under the same indicating number, appearing first with my name attached, which is afterwards changed to that of War Office, and then to Major Palliser's.

I submit that these proceedings furnish further indisputable evidence of the identity of the two plans, confirmed by the fact that the Ordnance Select Committee considered and treated them as identical; they also show that the invention was tested, and proved successful when simply carried out from my specification without the aid of my personal supervision, before Major Palliser submitted any plan; moreover, it is on record that, when Major Palliser submitted his proposal to the Ordnance Select Committee, he was informed that I had previously submitted the same invention.

I have been led into this somewhat lengthy explanation from the necessity of replying to Major Palliser's statement, and the facts which have thus been elicited confirm, I contend, the identity of the two plans, and I trust they may correct many erroneous impressions which seem to have prevailed respecting the nature of my invention of 1860; but while the general question has thus been elucidated, it nevertheless appears to me that many of the points raised do not affect the real question at issue, which is a very simple one, and only amounts to this, to which in conclusion I again beg to direct your attention, viz., whether the guns made in 1868 were *bored cylindrical*, or *slightly taper*, had

* Page 37; the two paragraphs immediately preceding the conclusion.

had tubes of *wrought iron, steel, homogeneous metal*, or similar material of *greater strength* and *extensibility* than cast iron *turned outside*, and *closed at the breech-end, fitted* into them and whether the guns *thereby acquire the increased strength*, and are made available for *rifled guns*, and if so, I submit that the identity between them and my plan of 19th May 1860, is fully established.

I am, &c.
(signed) *P. M. Parsons.*

P.S.—I forward copies of my specifications herein referred to, viz., No. 496, 6th March 1855; No. 1,687, 13th July 1860; and No. 2,876, 17th November 1863.

Major *Palliser* to Mr. *Gregory.*

Dear Sir, Army and Navy Club, 18 June 1869.

In reply to your letter of the 16th instant, forwarding Mr. P. M. Parsons' statement, and asking for any observations which I may have to make in reply bearing on the question of identity, I beg to say that Mr. Parsons is mistaken, as to fact, in supposing that I proposed (pages 16 and 17) to place initial strain upon the cast-iron gun. I pointed out how this could be done; but in the next page I said, with reference to the "setting-"out" proof, I prefer "this method of equalising the strains on the rings to that of forcing "them over each other by hydraulic pressure; for since the inner ring would be thus in "a state of continual compression its first action is to assist the pressure of the gas in "straining the outer ring." Again (page 20), I say, "we shall at any time be able to "ascertain whether this gun has been taxed beyond its elastic limit by drawing the tube "out for a short distance in order to ascertain that it is not jammed." However, as a matter of fact, every gun that has been converted on my plan has had its tube inserted without initial pressure, and it so happens that the first tube in my first gun, an 8-inch 68-pounder converted into a 9-inch gun, was found to be defective *after proof*, but was nevertheless taken out quite freely and a new one was substituted for it.

Initial tension.

This question of initial pressure is most important. I pointed out (page 8, "Treatise "on Compound Ordnance,") that "the elasticity of cast-iron is fully excited when it has "stretched ·00088 of its length, and since it stretches ·00022 of its length under each "additional strain of one ton per square inch, we perceive that its tensile strength within "the elastic limit $= \frac{\cdot 00088}{\cdot 00022} = 4$ tons per square inch." Now, since the resistance of wrought iron to compression is equal to about 12 tons per square inch, it follows that any initial pressure placed by the cast-iron casing upon the wrought-iron tube would have the effect, chiefly, of stretching the cast iron at the interior of the casing, the result of which would be to cause the cast-iron casing to crack under the additional strain caused by the discharge of the gun. In proof of this statement, I would mention that, during the year 1865, I constructed a 9-inch rifled gun of 12 tons weight by casting the cast iron round the tube. It so happened that there was not sufficient metal run into the ladle to fill the mould, and it was therefore allowed to remain in the ladle for a considerable time until a fresh supply was melted. The metal, consequently, became comparatively cold before it was run, and shrinkages took place in the ladle to such an extent, that when the metal was run round the barrel in the mould it did not shrink tightly round it, and the tube was quite loose. This tube expanded at proof upwards of one-tenth of an inch in diameter of bore, and the gun completed 500 rounds of 43 lbs. (and upwards) of powder, and 250 lbs. shot. Subsequently, I constructed, at my own expense, a 12-inch and another 9-inch gun. The metal round these guns was run in hot, and it shrunk tightly round the tube. The first gun burst at the first round, and the second gun burst at the fourth round, while the interior coiled tube of the second gun did not burst, although its bore expanded half inch in diameter. It is true that the charges of the second 9-inch gun were fired in a more trying manner than those of the first gun, but still not sufficiently to account for such a remarkable difference of strength. I would refer you to the manufacturers, Sir W. G. Armstrong & Co., for evidence as to fact of the above statement concerning the construction of these guns.

In consequence of the extreme importance which I attach to this point, all guns which have been, or are being, converted on my proposal are lined with loosely fitting tubes; and hence Mr. Parsons is mistaken in supposing (page 38) that the tubes "were forced "into the guns by mechanical pressure." At first, the casings and barrels were made taper for the purpose of obtaining an accurate mechanical fit. But experiments, conducted at my own expense, satisfied me that the great ductility of the coiled barrel, rendered this nicety unnecessary, and the great economy, conferred by the difference allowed between the size of the tube and the bore of the casing, has had considerable weight upon the decision to convert guns upon my plan.

Mr. Parsons disapproves of my plan, for he says in his letter to the "Army and Navy Gazette," of 28th April 1869, "If Major Palliser adopts such a fit that a proof-charge "will bulge the barrel to such an extent as to necessitate reboring, it would be injured "by straining the metal beyond its elastic limit, which ought to cause its rejection." Now, I wish to point out that in all my guns the metal of the tube is strained beyond its elastic

elastic limit; in the 64-pounders a permanent enlargement of ·03 of an inch is allowed. In the heavier guns, viz., the 10-inch guns and 68-pounders converted into 7-inch and 8-inch guns, the bore is so much enlarged that the tubes of these guns are set out in a sub-calibre, and are bored out afterwards to the finished size. This principle of enlargement depends upon the statement (page 9, "Treatise on Compound Ordnance"):—The final strength of wrought iron varies "from 25 to 28 tons, and this metal suffers no loss of "final strength from having been strained beyond the limit of elasticity, for, should the "equilibrium of the internal forces be disturbed, or the iron crippled, a fresh equilibrium "of the elastic forces will establish itself, and the metal remains as strong as before."

Longitudinal strength.

Mr. Parsons says (page 38)—"The specification also explained that another object, "which could be obtained by the plan"—which was not boring up the cast-iron gun—"was a reduction of the calibre, and that the longitudinal strength of the gun would *be* "*preserved.*" This shows that Mr. Parsons is even now not aware that boring up the casing to a certain point increases its longitudinal strength to resist strains which act on an area which remains constant; at all events, this principle, which is the principle upon which the guns are converted, whether right or wrong, is at total variance with the theory Mr. Parsons entertains; and it is moreover at variance with the theory of longitudinal strength which had previously been generally entertained.

The Ordnance Select Committee, in their Report, No, 4,888 (already forwarded to you), state 'Major Palliser is of opinion that the resistance of the cast-iron portion of the "gun to a given longitudinal strain applied internally, is increased by increasing the area "which receives it; that the strength of the gun in this respect is not less but more than "it was before it was bored out to receive the coil. This strain, according to his views, "like the circumferential strain, is principally borne by the interior. The Committee "think that there is much probability that this view is correct."

I enclose a drawing which I have taken out of General Gilmore's "Operations against "Charleston," showing that cast iron is not sufficiently strong to resist the longitudinal strain in an 8-inch gun if the original area of the bore is preserved; and I would call your attention to the longitudinal strength shown by the bored-up casing of the 8-inch rifled gun, No. 345 (page 9, Ordnance Select Committee Report, No. 4,888). All the cast-iron guns which have been strengthened at Woolwich with external hoops, and which have not burst sideways, have blown their breeches out.

Reduction of calibre.

The adoption of a reduced calibre, even if original, would scarcely involve any question of identity. As a matter of fact, the present calibre of the 32-pounder, 6·3 inches, is retained when that gun is converted into a 64-pounder rifled gun; and experiments are at present in progress to ascertain whether the calibre, 8 inches, of the 68-pounder should be retained, or be reduced to 7 inches when converted into a rifled gun. Mr. Parsons' drawing showed the calibre of the 68-pounder reduced to 5 inches.

Evidence.

Mr. Parsons suggests (page 38) that you should receive explanations from Colonel Campbell, Mr. Anderson, and Mr. Frazer. Should you be of opinion that this suggestion would facilitate the end you have in view, I should offer no objection; but I would request leave to cross-examine these officials, on account of the very warm manner in which some of them have opposed me.

Material and construction.

I cannot admit the first part of Mr. Parsons' assertion that "it is quite immaterial in "what way the tubes are constructed, so long as they were of the material specified," though I would do so if any other mode of manufacture "answered the purpose." I maintain, and have ever maintained, that no mode of manufacture, but one which places the fibre of the wrought iron circumferentially to the bore, will answer the purpose. As proof of this, I may state, that the numerous wrought-iron guns, which, about the date of Mr. Parsons' proposal, were lined with solid forged tubes, have had those tubes bored out, because they had split longitudinally, and the guns have been re-lined with coiled tubes. Had those guns been of cast iron, lined with a single solid forged tube, they would have burst with violence when the tube had split. At all events, the tubes, by which the cast-iron guns of the Service are being lined, are, whether right or wrong, coiled tubes, and such tubes were not specified by Mr. Parsons.

Mr. Parsons is mistaken in supposing that the guns lined in 1861, to which he alludes, were converted in accordance with his proposal, or that they exercised any weight in the recommendation to convert guns upon my plan. They are the only lined guns to which no allusion whatever was made by the Ordnance Select Committee in recommending (Report 4,888, already sent to you) the conversion of cast-iron guns with coiled tubes upon my plan.

I am, &c.
(signed) *W. Palliser.*

P. S.—I beg to forward herewith my "Treatise on Compound Ordnance," together with a recent correspondence in the "Army and Navy Gazette" to which I have referred.

Mr. *Gregory* to Mr. *Parsons.*

Dear Sir, 1, Delahay-street, Westminster, 24 June 1869.

If the reply of Major Palliser, recently sent to you, should contain any *new matter bearing upon the question of identity,* to which you desire to make a rejoinder, I shall be prepared to consider such rejoinder, provided it reaches me in the course of the current week.

I am, &c.
(signed) *Charles Hutton Gregory.*

Mr. *Gregory* to Major *Palliser.*

Dear Sir, Delahay-street, Westminster, 24 June 1869.

If the reply of Mr. Parsons, recently sent to you, should contain any *new matter bearing upon the question of identity,* to which you desire ta make a rejoinder, I shall be prepared to consider such rejoinder, provided it reaches me in the course of the current week.

I am, &c.
(signed) *Charles Hutton Gregory.*

Mr. *Parsons* to Mr. *Gregory.*

Sir, Blackheath, S. E., 25 June 1869.

With reference to Major Palliser's reply to my statement, I beg to observe that, if words have any meaning I am not mistaken as to the fact that Major Palliser proposed to put an initial strain on the gun at pages 16 and 17, for if the taper tube is driven in after the surfaces are in contact, some initial strain must be produced, and the setting out he afterwards describes refers to putting the different rings composing the lining tube into one another; and it is not a matter of fact, as he states, that every gun converted on his plan has had the tube inserted without initial pressure. All his first experimental guns, viz., Nos. 207, 220, 221, 247, were bored out taper about $\frac{3}{8}$th inch, and had the tubes forced in *more* or *less,* as you will ascertain by inquiry at the Royal Gun Factories, and it was upon the experiments with these, and my previous guns, that the system was proceeded with, and became eventually adopted, and Major Palliser's proposal therefore does embrace the two modes of making the bore either cylindrical or slightly taper, and whichever he now adopts in practice is immaterial, for my specification of 1860 also embraced both plans, and the two proposals are therefore doubly identical.

Major Palliser's further statement, page 50, paragraph 2, that I am mistaken in supposing that the tubes were forced into the guns by mechanical pressure, because they fitted loosely, is also incorrect, in fact it appears to me absurd. May I ask, does Major Palliser suppose that the tube would put itself into the gun? If not, then *some kind of force must be employed,* and I maintain that *force was employed* to insert the tubes into the guns converted in 1868, whether the fit was *light* or *loose,* and *if force had not been employed the guns could not possibly have been put together.* As to the castings being now bored cylindrical instead of taper, I conceive that such an immaterial difference cannot affect the broad question of identity, which, I contend, depends on the main and essential principles of the invention; if, however, you think it does in the slightest degree, I would ask that an exact measurement be taken of the new bores of some of the guns converted in 1868, as I am satisfied not one would be found truly cylindrical, for the practical reason I gave in a foot note in my statement, viz., that the wear of the boring cutter would leave the bore slightly taper.

The 68-pounder converted under my proposal in 1861 was bored out cylindrical, or as nearly so as possible, and would therefore be identical in this respect with the guns converted in 1868.

As to paragraph 3, page 50, I certainly do think that if the proof charge bulges the barrel more than allowed by the service regulation, the gun ought to be rejected, as any other gun would be, and if this bulging takes place in consequence of a too loose fit, I should say that the manufacturer was performing the work in a careless manner, and not properly fitting the tubes, and if, as Major Palliser states, the metal of the tubes in all the guns is strained beyond its elastic limit, he has, I consider, carried out the system in a manner altogether at variance with engineering experience and practice, and it is therefore not surprising that so many of his guns have failed prematurely.

I certainly did say, in my specification, that the longitudinal strength of the gun would be preserved, and this was one of the advantages I claimed for the system, and Major Palliser in his Treatise says, page 16, line 3, "The cast iron will have to do nearly all the "longitudinal

"longitudinal work, for this our guns are *fully powerful*, and if so it is useless to argue "the question whether or not it is increased by boring the gun up larger;" if it is, then as *I did propose* to bore up the gun larger, it would be so much the stronger, at any rate it does not require any great profundity to see that if the powder gas acts on an area, say only one-half of that which takes the thrust from the end of the tube, that the strain per inch of metal would be reduced in proportion; Major Palliser really ought to give me credit for knowing the A B C of engineering.

Major Palliser in the last paragraph, page 3, gives a garbled quotation from my statement; he says he cannot admit my assertion that "it is quite immaterial in what way the "tubes are constructed, so long as they were of the material specified;" but I added, and "*answered the purpose intended*," therefore, I presume, Major Palliser would not dissent from this statement taken as I wrote and intended it, and tubes constructed otherwise than of coiled iron have been tested and have answered the purpose intended perfectly. Thus the first 68-pounder, under my proposal, tested in 1861, had a tube made from a solid forging, and this gun did answer and was referred to by the Committee as having sustained a greater proportionate strain than Major Palliser's first gun with a coiled tube tested in 1863, and I have applied tubes of homogeneous metal or mild steel from solid forgings to line two other guns, both of which have endured a more severe test that any guns lined with coiled tubes, so that coiled tubes are not essential, and if they had been I could have used them had I been employed to work out the invention, and in any case the tubes now adopted are made of *wrought iron*, and this material I specified in my proposal of 19th May 1860.

I am, &c.
(signed) *P. M. Parsons.*

Major *Palliser* to Mr. *Gregory.*

Dear Sir, Army and Navy Club, 24 June 1869.

In reply to your letter of this date, I beg to observe that Mr. Parsons is mistaken in the assertion contained in his letter of the 22nd instant, that he specified in 1860 an "extensible" metal, if by that epithet he desires to convey the meaning of extensibility *beyond* the limit of elasticity. So far as my memory serves me, the word "extensible" does not occur in either his specification or proposal of 1860.

The employment, for the purpose of breaking the continuity of internal fracture of two thin coiled tubes at the breech end of the barrel in guns of moderate calibre, where a single tube of thickness equal to their united thicknesses could more easily have been made, differs essentially from building up the interior of large guns with concentric tubes of "any suitable metal or alloy" forced into each other, and then forced into the casing.

Mr. Parsons (page 48) denies my statement that he proposed not to bore up the gun to an increased size, and gives the amount bored out at the muzzle of the gun by the conical bore. I would, however, remark, that as the argument related to longitudinal strength, the amount of metal removed at the breech end of the casing should alone be considered.

The 68-pounder alluded to by Mr. Parsons as having been converted on his plan in 1860–61 was lined with a solid forged tube, which was shrunk into the *bored-up gun* in accordance with the recommendation of Sir W. Armstrong, and Mr. Parsons' name was disassociated from the experiment by the Ordnance Select Committee, because it was not made upon his plan.

A bored-up 32-pounder, after several failures to shrink in a tube, was subsequently lined by forcing in a tube by hydraulic pressure. The tube in question, after a careful investigation, was subsequently ascertained to have been a solid forging. It split, and at the 74th round moved bodily forward, about three or four inches, cutting off the vent. This failure was due to the want of the screw-collar at the muzzle which exists in my plan.

Mr. Parsons alludes (page 49) to a 68-pounder lined-gun which failed at proof. That gun, in compliance with the desire of the authorities in the gun factories, was lined with a tube of steel inside a tube of coiled iron. The steel tube split down its whole length at the first round. That plan of conversion, which differs essentially from the plan on which the guns of the service are converted, served both as regards the failure of the steel tube and the success of the outer coiled tube in preventing an explosive burst, to prove the necessity of the quality of extensibility beyond the limits of elasticity, possessed by a coiled tube of wrought iron for lining a casing with a loose tube upon my plan.

Mr. Parsons is mistaken in supposing that I was informed by the Ordnance Select Committee that he "had previously submitted the same invention"; on the contrary, I was informed that my plan was altogether different from his.

I am, &c.
(signed) *W. Palliser.*

COMMANDER COLOMB'S CASE.

Commander *Colomb* to the Under Secretary of State, War Office.

Her Majesty's Ship "Dryad," Mauritius,
30 September 1869.
(Received 2 December 1869.)

Sir,

REFERRING to my letter of the 5th of August 1868, relative to my claims on the War Department connected with "Army Signals," and your reply thereto, dated 22nd October 1868 (No. 84 - C—1153), informing me that those claims were under consideration, I beg most respectfully to draw your attention again to the subject, which has, I presume, escaped notice.

2. I think that when my claims are investigated, the Right honourable the Secretary of State for War will have no difficulty in concluding that some substantial reward is fairly due to me for my services on this question; for although I only brought forward in my former communication one ground of application, there are others which are equally strong.

3. The value of the system of Army Signals now established is too widely acknowledged to require proof, but it is testified to by the rewards conferred on my late colleague, Major Bolton, who is jointly with me, the author of the scheme. I must not be understood as complaining, when I point out that, while he has received (1.) 1,000 *l.* reward and his expenses. (2.) A Staff appointment as Instructor of Signalling, and (3.), his unattached majority, I have received only a bare acknowledgement through the Admiralty.

4. It is not to be denied that as it is now 10 years since I was invited by the War Office to consider the subject, so. the simplicity and efficiency of the Army Signal system, is at least in a considerable degree, due to my exertions and perseverance throughout that time. I rest little on the fact that the "Flashing system" is carried on now under my patent, which counsel of the highest standing has pronounced to be "a good and valid one," for I look on the taking out of a patent to be merely an expensive method of proving priority, which has been forced upon me by law, and which I could never otherwise appeal to.

5. The adopted system of signals, &c., is so simple, easy to learn, and inexpensive to work, that at any rate, one of its authors is likely to suffer in remuneration and reputation from an under estimate of his labour. It is only when I review the number of my failures, that I feel pride in my success; and when I contrast the comparative indolence of very active service on a foreign station, with the wearing labour I have undergone for Her Majesty's army, that I feel something like regret for lost time.

6. For I must point out that in undertaking, in conjunction with Major Bolton, the service we have successfully concluded, I gave up the naval appointments usually held by officers of my rank; and in the case of my last services at Chatham, distinctly postponed my advancement in my own profession. For by the rules of the Navy, not one day of all the time I have given to the War Office counts as service.

7. Hence it will be seen that if I should, as has been suggested to me, look to the Board of Admiralty for reward, the very nature of the case has put it out of their power to reward me professionally, and as I had already provided Her Majesty's naval service with a complete signal system, my labours for the army have conferred only an indirect benefit on my own service.

8. I venture to hope, in conclusion, that although I write from a distance, and am unable to appeal personally to the Right honourable the Secretary of State, from having resumed a career which was only postponed for the good of Her Majesty's army, this circumstance will not disincline him to consider my application

application with favour, and I need not say that whatever be the result, my services will still continue as heretofore, to be given cheerfully to the War Office, when required.

I have, &c.
(signed) *P. H. Colomb,*
Commander.

(84—C—1281.)

The Under Secretary of State, War Office, to the Secretary to the Treasury.

Sir, War Office, 6 November 1869.

I AM directed by the Secretary of State for War to acquaint you for the information of the Lords Commissioners of Her Majesty's Treasury, that a correspondence has taken place between this department and the Admiralty respecting the services rendered by Commander Colomb, R.N., in organising a system of naval and military signalling, which has resulted in an arrangement to provide, with the sanction of the Lords Commissioners of the Treasury, in the Estimates 1870-71, for a payment of 500 *l.* to Commander Colomb (in addition to any sum already paid to him), as a final reward on account of his services in respect of signal arrangements for land service, and in the preparation of a code of signals for joint naval and military use.

The Lords Commissioners of the Admiralty have expressed their willingness to insert in the Naval Estimates for 1870-71, one half (250 *l.*) of the reward which is proposed to be given, and I am therefore to request that you will move their Lordships to approve of the sum of 250 *l.* being inserted in the Army Estimates for 1870-71, to provide for the other half of the reward.

I have, &c.
(signed) *Northbrook.*

(18,431—69.)

The Secretary to the Treasury to the Under Secretary of State, War Office.

Sir, Treasury Chambers, 18 November 1869.

WITH reference to Lord Northbrook's letter of 6th instant, relative to the reward to be given to Commander Colomb, R.N., for organising a system of naval and military signalling, I am directed by the Lords Commissioners of Her Majesty's Treasury to acquaint you, for the information of Mr. Secretary Cardwell, that before sanctioning the proposed payment of 500 *l.*, my Lords would wish to be assured that no further claims can be, with justice, made for similar remuneration in respect of this invention.

I am, &c.
(signed) *James Stansfeld.*

(84—C—1288.)

The Under Secretary of State, War Office, to the Secretary to the Treasury.

Sir, War Office, 23 December 1869.

IN reference to your letter of the 18th ultimo, 18,431—69, inquiring, by desire of the Lords Commissioners of Her Majesty's Treasury, prior to sanctioning the proposed payment of 500 *l.* to Commander Colomb, R.N., in respect of his services in connection with the system of signalling, &c., introduced into Her Majesty's army and navy, whether any further similar claims on this head can equitably be made,—

I am directed by the Secretary of State for War to acquaint you, for the information of their Lordships, that, so far as this department is aware, no further claims can with justice be made for reward in respect of the system of signalling which has been adopted for joint naval and military use.

I have, &c.
(signed) *Northbrook.*

Mr. *W. Law* to the Under Secretary of State, War Office.

(21,298—69.)

Sir, Treasury Chambers, 8 January 1870.

THE Lords Commissioners of Her Majesty's Treasury have had before them your letter of 23rd December last, No. 84—C—1288, relative to the proposed reward to Commander Colomb, R.N., for the invention by him of a new system of signalling.

I am directed to acquaint you, for Mr. Secretary Cardwell's information, that, under the circumstances stated in that letter, my Lords will not refuse their sanction to the grant of 500 *l.*, to Commander Colomb in full of any claim by him or any other person against Her Majesty's Government in respect of this invention.

I am, &c.
(signed) *William Law.*

(84—C—1294.)

Major General Sir *H. K. Storks* to the Secretary to the Admiralty.

Sir, War Office, 15 January 1870.

IN reference to your letter of the 20th October last, M., respecting a payment of 500 *l.* to Commander P. H. Colomb, R.N., as a final reward on account of his services in respect of signal arrangements for land service, and in the preparation of a code of signals for joint naval and military use, I am directed by the Secretary of State for War to acquaint you, for the information of the Lords Commissioners of the Admiralty, that a representation has been made to the Lords Commissioners of Her Majesty's Treasury upon the subject, and that their Lordships have stated that they "will not refuse their sanction to the grant of 500 *l.* to Commander Colomb, in full of any claim by him, or any other person, against Her Majesty's Government, in respect of this invention."

I am accordingly to state that Mr. Secretary Cardwell will cause one-half (250 *l.*) of this amount to be provided in the Army Estimates of the ensuing year, on the understanding that the Lords Commissioners of the Admiralty will issue instructions for the insertion in the Navy Estimates, 1870-71, of a similar amount, to cover the remainder of the reward.

I have, &c.
(signed) *H. K. Storks.*

(84—C—1294.)

The Under Secretary of State, War Office, to Commander *Colomb.*

Sir, War Office, 18 January 1870.

IN reference to your letter of the 30th September last, upon the subject of your claims in respect of a system of signalling, &c., introduced into Her Majesty's army and navy, I am directed by the Secretary of State for War to acquaint you that provision will be made in the Army and Navy Estimates for 1870-71 for a total reward of 500 *l.* on account of your services in connection with the signal arrangements for land service, and in the preparation of the code of signals for joint naval and military use.

I am

I am to add that this reward of 500 *l.* is granted on the understanding that no further claim for reward shall be made by you for services rendered by you to the present time, to any Government department, and that no claim for royalty shall be made by you, or by any other person, in the event of its being considered expedient to manufacture the signal apparatus invented by you in conjunction with Major Bolton, in Her Majesty's dockyards.

I have, &c.
(signed) *Edward Lugard.*

The Secretary to the Admiralty to the Under Secretary of State, War Office.

Sir, Admiralty, 28 January 1870.

In reply to your letter of 15th inst. (84—C.—1294), acquainting me that the Lords Commissioners of the Treasury have sanctioned a grant of 500 *l.* to Commander Colomb as a final reward on account of his signals for naval and military use, and that one-half of this amount will be provided in the Army Estimates of the ensuing year, on the understanding that the other half is provided in the Navy Estimates, I am commanded by my Lords Commissioners of the Admiralty to acquaint you, for the information of the Secretary of State for War, that their Lordships will give the necessary order for the insertion of 250 *l.* in the Navy Estimates for 1870-71.

I am, &c.
(signed) *Vernon Lushington.*

Commander *Colomb* to the Under Secretary of State, War Office.

Her Majesty's Ship "Dryad," Bombay,
Sir 4 April 1870.

I am in receipt of your letter (No. 84—C.—1294), of the 18th January last, acquainting me that provision will be made for paying me 500 *l.* on account of my services in connection with the signal arrangements for land service, and in the preparation of the code of signals for joint naval and military use.

2. Had nothing been added to this statement, or had you informed me simply that no further reward would be granted, I should have accepted the honorarium thus offered with pleasure, and without further question. It is in the discretion of the Right Honourable the Secretary of State for War to give me any reward, or no reward, and as I had already laid the case fully before him in my letter of the 5th August and 30th September, there was no more to be said on my part, and the subject must have dropped.

3. The conditions annexed in the final paragraph of your letter appear to me to show that in accepting this 500 *l.*, I shall officially admit that I have then received the full money value to Government of my invention of flashing signals. As I am not prepared to make this admission, I most respectfully decline to receive the reward.

4. I have no doubt about the propriety of this decision, although I am well aware my motives may be misconstrued. It will certainly be assumed that I am dissatisfied with the amount offered, and simply want more. I repeat and appeal to all my public correspondence as proof, that I fully acknowledge the right of Government to my service in the matter either with or without recompense. I do not recognise that I have any right to make a bargain with Government, and say, "If you pay me so much I will do so much work." On the contrary, I think it is my duty as a public servant to go almost to the verge of imprudence in the endeavour to benefit the country; this I have done and hope to continue to do. It is, however, my duty to bring my services from time to time under the notice of Government, in order that they may not involuntarily do injustice. The decision then rests with them and not with me. So, if

Government from time to time think proper to inform me that I am entitled to certain rewards, or entitled to no rewards, there is no appeal that I know of against such decision. When, however, Government offer a reward conditionally on my acknowledgment that it is adequate, I must decline if such be not my opinion.

5. I am asked now, on condition of receiving 500 *l.*, to forego all future right to bring the value of my invention under the notice of Government, although the value is increasing every day. From 1860 to 1863 my sea-service flashing apparatus, exactly the same as it is now, bore no value whatever. It was reported on as useless and condemned in pretty strong terms, and the then Board of Admiralty could only be got to try conclusive experiments with it by a persistent tenacity on my part pushed almost to the confines of impropriety. At a personal interview with the Board I had to insist, in curt and distinct terms, either that my views, or none, should be carried out; the result was, that whereas in May 1863, Government estimated the full value of the invention at 44 *l.*, at the end of 1863 they spent 400 *l.* on it; since that time its use has been constantly on the increase; officers have over and over again retracted unfavourable opinions, every such retractation increasing the value. Government in 1863 was totally unaware of the worth of my invention; I had my opinion, and Government had theirs; mine, however, has proved to be right. I am bound to reason that this state of affairs still exists. It would have been a public misfortune had Government offered, and had I accepted as a final reward, what in May 1863 they would have considered the money value of my invention; I must immediately have severed my connection with the thing as a measure of prudence; the same result would probably come about now.

6. But setting aside the question of increasing value, I may state some of the grounds why I consider that present value is not measured by 500 *l.*; there seem to be three ways of estimating the value of an invention which is in use, and which does not appear likely to be superseded.

A. What sum would the user be contented to pay sooner than give up the use?

B. What amount of time and money has been expended in producing and bringing the thing into use, and what is the value of that time when spent in other employments?

C. What has been usually paid for similar inventions?

7 (*a*). Suppose, for instance, that some one had the power of preventing the use of flashing signals in our Channel fleet, would Government, even for the fleet only and in time of peace, draw the line at 500 *l.* in order to obtain permission to use them again? Would they stop at 10 times that sum? Where would the line be drawn for the whole navy in time of war? Is it not evident that proper communication between the Admiral and his ships by night in time of war may make all the difference between victory and defeat.

8 (*b*). It is now 11 years since the studies resulting in the flashing system were commenced by me; not less than five years, at the ordinary rate of work, have been given up by me to it. My time in command of one of Her Majesty's ships appears to be worth (say) 500 *l.* per annum, five years at that rate would be 2,500 *l.*: as to money expended, I calculated that in most years the cost of keeping the flashing system going until it could walk by itself was 400 *l.* a-year. The English patent alone has cost half the sum now offered by Government, and whatever may be thought, so long as there is a patent law, no man can embark seriously in an invention without undertaking that expense. The receipt by me of a profit on any one year's business is a more or less rare event; if Government had not reimbursed me to the extent of 500 *l.*, I should now show a loss. The time and money expended on this question cannot, at a moderate estimate, be valued under 6,000 *l.*

9 (*c*). Lastly, what has been usually paid for similar inventions? Mr. Redl was paid in 1858 or 1859, 1,500 *l.* for a system of signals only partially tried and never adopted, and which never came into actual use. Major Bolton was paid 1,000 *l.* and his expenses, within, I think, two years of his first proposal, although his invention had never been used except for experiment. I have no certain

certain information relative to payment made to my predecessors in the matter of night signals. A Mr. Mitchell Thompson, I think, received something for a rejected plan. A Mr. Ward, an American, received, if I mistake not, 250 *l.* merely to take him back to his own country after a total failure.

10. I think that it is apparent on the face of these statements, which I believe to be true, that Government is unwittingly pressing me too hard, when asking me to surrender all my claims for 500 *l.*

11. I wish to state that I am not a suppliant to Government; I place my services before them just as I would place those of any other person, were it my duty. If they choose to reward me, I shall accept my reward with pleasure. If my services do not in their estimation deserve reward, I am equally content; when my services are again required they will, I hope, be again cheerfully given; I wish to be useful, so far as I may; if with personal benefit, I shall be glad, if without personal benefit, I shall not be sorry.

12. Respecting this 500 *l.*, I shall be glad to accept it from the War Office, if offered only in the terms of the first paragraph of your letter, or even with an expression of opinion that I am fully repaid and must not expect more. I fear it is utterly out of the question my accepting it under the terms now offered.

13. On re-reading this letter, I think it possible my freedom of language may seem to show a want of respect to the Right Honourable the Secretary of State for War, and the Lords Commissioners of the Admiralty. I beg you to assure them that this is far from my intention. There is no cause that I know of to make me disrespectful; I only wish to be frank with the departments, as I know how difficult these cases are to deal with, and how important an item straightforwardness is towards a settlement.

I have, &c.
(signed) *P. H. Colomb,*
Commander.

(84—C—1328.)

The Under Secretary of State, War Office, to the Secretary to the Admiralty.

Sir, War Office, 30 May 1870.

In reference to your letter dated 20th October 1869, M., conveying the concurrence of the Lords Commissioners of the Admiralty in a proposal of a further payment of a sum of 500 *l.* to Commander Colomb, R.N., as a final reward for his services in connection with signalling arrangements for land and sea service, &c., I am directed by the Secretary of State for War to transmit, for their Lordships' information, the accompanying copy of a letter on the subject from Commander Colomb, dated 4th ultimo, in which he declines to accept the reward of 500 *l.* offered, if the grant be coupled with the condition embodied in the second paragraph of the letter addressed to him from this office on the 18th January 1870 (84—C.—1294), of which a copy is also enclosed. Commander Colomb expresses his willingness, however, to accept the sum named if offered in the terms of the first paragraph of that letter, or "even with an expression of opinion that he has been fully repaid, and must not expect more."

Mr. Cardwell desires me to observe that the statements put forward by Commander Colomb in furtherance of his claim to a larger reward have reference to the importance of his invention for naval purposes.

I am accordingly to request that you will move their Lordships to favour Mr. Cardwell with their opinion as to the propriety of altering the terms of the letter of the 18th January last, which conveyed the decision of the two departments to Commander Colomb.

I am to enclose, also, copies of correspondence with the Treasury on this subject; and to request that you will move their Lordships to favour Mr. Cardwell with an early reply to this letter.

I have, &c.
(signed) *Edward Lugard.*

(Immediate.)

The Admiralty to the War Office.

Sir, Admiralty, 6 June 1870.

HAVING laid before my Lords Commissioners of the Admiralty your letter of the 30th ultimo, (No. 84—C—1328) respecting a final reward to Commander Colomb for his services in connection with signalling arrangements for land and sea service; and forwarding copy of a letter from Commander Colomb, making certain objections to the terms proposed; also requesting their Lordships' opinion as to the propriety of altering the terms of the letter of the 18th January last, which conveyed the decision of the two Departments to Commander Colomb, I am commanded by their Lordships to acquaint you, for the information of the Secretary of State for War, that it appears to them undesirable to do anything which should give Captain Colomb any pretence for putting forward a further claim for reward on account of services which Her Majesty's Government have considered to be fully remunerated by the grant of five hundred pounds; and although the exact wording of the condition may not be of much importance, the reasons assigned by Captain Colomb against it appear to my Lords to demand that its spirit should be maintained.

I am, &c.
(signed) *Thomas Wolley.*

The Under Secretary of State
for War.

MR. SNIDER'S CASE.

The Under Secretary of State, War Office, to the Secretary to the Treasury.

Sir, War Office, 13 November 1869.

I AM directed by Mr. Secretary Cardwell to request that you will lay before the Lords Commissioners of Her Majesty's Treasury the enclosed memorial from the representatives of the late Mr. Jacob Snider, together with other documents of recent date, setting forth the distressed condition of the memorialists, and praying for some relief from Her Majesty's Government, in consideration of the services rendered by Mr. Snider, as the inventor of a system of breech loading which was adopted into the service in 1866, and has now been applied to the whole of the muzzle-loading rifles which were available for conversion, to the extent of upwards of 500,000 arms.

The case of Mr. Snider is of a very peculiar nature, and it may be stated at the outset, as indeed it is admitted by the memorialists, that Mr. Snider's representatives have no legal claim against this department; it will therefore be necessary to explain in some detail the circumstances under which Mr. Cardwell is induced to submit it for their Lordships' favourable consideration.

Mr. Snider's rifle was submitted to the War Office in September 1864; it was at once taken up by the department, and after competition with other systems, was adopted into the service in 1866. During this period of nearly two years, Mr. Snider was the only person connected with the arm who was known to the department, all the official correspondence was with him, and the experiments which were made were either under his superintendence or with his assistance.

In November 1865, when the arm had successfully passed through the public competition, Mr. Snider was placed in official communication with the Government Manufacturing Departments, for the purpose of working out necessary details, and it was not until 4th June 1866, by which time the first order for manufacture had been given to the Royal Small Arms Factory, that Mr. Snider asked that his claim to reward might be considered.

A copy of his letter is enclosed, together with the War Office reply, which directed him to send in particulars of his claims under the heads of personal services, and drawings, models, &c., as it was deemed desirable to treat this portion of Mr. Snider's claim apart from the general question of reward for the invention.

Mr. Snider duly furnished a specific claim under these heads, in a letter dated 28th June 1866, to which I am to invite their Lordships' particular attention. It will be observed that he asked a payment of 2,400 *l.* for eight months' services, and 300 *l.* for drawings, &c., supplied to the department, and as up to this time the department was not aware that his patent rights had become so heavily mortgaged as to make it doubtful whether he would ultimately receive any portion of whatever reward might be granted for the invention, the claims preferred in this letter were forthwith subjected to strict investigation, and judged by the number of Mr. Snider's attendances at the several departments during the period stated, the claim was considered excessive.

Before, however, the above conclusion was arrived at, the trustees of the patent opened negociations with the department, and as Mr. Snider had been seized with a serious illness which incapacitated him from business, his claims on the above account were merged in the general settlement, and the result was that the original claim of 2,700 *l.* was reduced to 1,000 *l.*, which amount was paid on the 27th September 1866, under a receipt acknowledging the same to be in full satisfaction and discharge of all claim.

But it should be remembered that Mr. Snider was at this time on his death-bed, and his illness had deprived him of the strength and opportunity of following up his original claim, and of urging any explanations in support of it. Had it been otherwise, Mr. Cardwell is willing to believe that the decision might have been re-considered, and that looking to the very peculiar circumstances which afterwards presented themselves, some recompense for personal services might fairly have been allowed to date from September 1864, instead of from November 1865, as specified in the claim.

It is unnecessary to dwell at length upon the award made to the trustees of the patent. There is no reason to doubt the correctness of the statement in Lord Elcho's letter, that neither Mr. Snider nor his family received any portion of that award; and with regard to the allusion in Mrs. Snider's memorial to certain proceedings in chancery, it may be mentioned that want of funds compelled the family to abandon them.

Having thus stated the facts of the case, I am to explain that although the memorial now under consideration was refused when first submitted, Mr. Cardwell thinks it becoming on the part of the Government to re-open the subject, now that we have completed the conversion of the stock of muzzle-loading arms into breech loaders on Mr. Snider's system.

There can be no question that the success of the converted arm has exceeded the most sanguine anticipations, and although it may be urged that the country has paid a fair price for the invention, the fact remains that the individual to whom we owe the original design died under very distressing circumstances, and left a widow, who is now through his misfortunes totally unprovided for.

Mr. Cardwell desires to submit the above for the very favourable consideration of the Lords Commissioners of the Treasury, and should their Lordships concur with him that this is a legitimate claim upon the bounty of the Government, he would propose to set aside in next year's Estimates a sum not exceeding 1,700 *l.* (this being the amount disallowed from Mr. Snider's claim of 28th June 1866) for the benefit of Mr. Snider's family, to be applied in such manner as may, upon inquiry, appear most expedient.

I am, &c.
(signed) *Northbrook.*

The Secretary to the Treasury to the Under Secretary of State, War Office.

Sir, Treasury Chambers, 26 November 1869.

THE Lords Commissioners of Her Majesty's Treasury have had before them Lord Northbrook's letter (7669—2122) of 13th instant, and enclosures, relative to an application for relief from the representatives of Mr. Jacob Snider, the inventor of a system for converting muzzle-loading rifles into breech loaders, which was adopted into the service in 1866.

I am directed to acquaint you, for the information of Mr. Secretary Cardwell, that, looking to the very exceptional circumstances connected with the case of the late Mr. Snider, my Lords will not refuse their sanction to the amount of the proposed grant of 1,700 *l.* to his widow and family being inserted in the Estimates, on the understanding that care is taken, as suggested, that the amount is secured for their benefit, that it is accepted in full of any claim which they may consider they have against Her Majesty's Government, and that it is not paid over until Parliamentary sanction is obtained.

I am, &c.
(signed) *James Stansfeld.*

ARMY (REWARDS TO INVENTORS).

COPY of REPORTS and CORRESPONDENCE explanatory of ITEM C (REWARDS to INVENTORS) in VOTE 15 of the ARMY ESTIMATES for 1870-71.

(*Mr. Secretary Cardwell.*)

Ordered, by The House of Commons, *to be Printed,*
31 *May* 1870.

[*Price* 8 *d.*]

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Under 8 *oz.*

ARMY (MILITARY LABOUR, &c.)

RETURN to an Address of the Honourable The House of Commons, dated 21 February 1871;—*for*,

"COPY of the REPORT and PROCEEDINGS of the COMMITTEE appointed by His Royal Highness the Commander in Chief "to draw up REGULATIONS for Extending the System of 'MILITARY LABOUR to MILITARY WORKS,' and for enabling every Man in the Army desirous of Working at a Trade to obtain Employment." "

War Office, 27 February 1871.

EDWARD CARDWELL.

REPORT of a COMMITTEE assembled by order of His Royal Highness the Field Marshal Commanding in Chief on the 22nd March 1870, and subsequent occasions, for the purpose of framing REGULATIONS for the employment of SOLDIERS at TRADES.

President.

Colonel Herbert, C.B., Assistant Adjutant General.

Members.

Colonel Mackenzie, C.B., Assistant Quarter Master General.
Lieut. Col. Ewart, C.B., R.E.

THE Committee find from the returns which have been obtained from the majority of the regiments in Great Britain (a summary of which is annexed), that the number of *bonâ fide* artificers available for employment at trades is very limited, being an average of $17\frac{16}{35}$ per battalion.

Few of these have been found on being tested by the Royal Engineer Department to be first class workmen.

As therefore a difficulty must be anticipated in selecting suitable men for pioneers in each regiment, and as without suitable men it will be impossible to establish any proper system for the employment of soldiers at trades, the Committee recommend that in battalions not having in their ranks fit men, or being unable to obtain them by transfer, authority should be granted to send inferior workmen to be trained as smiths, carpenters, painters, &c., in the Arsenal at Woolwich; as is now done in the case of saddle-tree makers, wheelers, smiths, &c., for service in the Royal Artillery or Army Service Corps. Such men should only receive their regimental pay, and be considered as apprentices, while under training.

The Committee, taking into consideration the important duties that will have to be performed by the non-commissioned officers entrusted with the permanent supervision of pioneers, are of opinion that they should not be confided to a corporal or lance serjeant, and therefore believe it to be necessary to the success

 of

of the system that the non-commissioned officers selected should, after undergoing the probation prescribed in the annexed Regulations, be confirmed in the rank of serjeant. In paragraph 2 of War Office letter, dated 9th February 1870, No. $\frac{40,005}{568}$, the Secretary of State alludes to there being no objection to the appointment of a serjeant to the charge of pioneers, conditionally that any remuneration he may receive above the pay of a corporal should be defrayed from the proceeds of the Works Fund. Now under this arrangement the appointment of a serjeant is practically impossible, as if a non-commissioned officer of this rank were appointed, he would have to be mustered as a serjeant, and would be entitled to the pay of a serjeant independent of any benefit from the Works Fund. The supervision of pioneers must then devolve upon a corporal or lance serjeant, neither of which grades is, in the opinion of the Committee, commensurate with so responsible a position.

The Committee append Regulations which have been drawn up in conformity with the instructions contained in the letter from the War Office alluded to in the preceding paragraph.

Owing to the present reduced establishment of regiments, and the calls upon them for men for guard duty, servants, orderlies, police, canteen waiters, school assistants, fire brigade or picket, hospital orderlies, men in hospital, prisoners, recruits, tailors, shoemakers, regimental clerks, men on fatigue duty, &c., the Committee find the number of men, beyond the pioneers, who can find time to work will necessarily be very small.

(signed) *Arthur Herbert*, Col., A.A.G.
Kenneth D. Mackenzie, A.Q.M.G.
C. B. Ewart, Lieut. Col., R.E.
Commanding Royal Engineer,
Home District.

REGULATIONS.

THAT the following be the REGULATIONS for securing the employment of SOLDIERS in TRADES.

1. THE pioneers of a regiment to cease to be employed on fatigue duties, or in the quartermaster's stores.

2. They are to consist of,—

1 Serjeant; a carpenter by trade, if possible	Per Battalion.
3 Carpenters	
2 Bricklayers, one able to plaster, and one able to slate	
1 Smith, able to shoe horses	
1 Mason, able also to cut stone	
1 Painter and glazier	
2 Plumbers and gasfitters	
1 Serjeant, 10 Pioneers	

3. The non-commissioned officer who may be selected to take charge of the pioneers should, besides being a tradesman, be able to write a legible hand, and to keep simple accounts.

4. In the event of a competent man not being available in a battalion, the commanding officer should apply to the Adjutant General with a view to ascertain whether a suitable non-commissioned officer to fill this post could be transferred from another regiment.

5. A competent man having been selected for pioneer serjeant, application should be made to the Adjutant General for him to be trained at the School of Military Engineering, with a view to his going through short courses both in the architectural and field-work branches, so as to fit him to superintend the pioneers, both on barrack repairs and on service in the field.

6. This non-commissioned officer, having been reported qualified by the commandant of the School of Military Engineering, will be posted on probation to a battalion, and may be recommended by the officer commanding for confirmation after six months' trial.

7. Before recommending the non-commissioned officer for confirmation, the officer commanding should obtain the opinion, in writing, of the Commanding Royal Engineer, or superintending officer of Royal Engineers of the division or station, as to the manner in which he may have performed his duties in connection with that department.

8. Officers

8. Officers commanding will take steps at once to carry out the instructions laid down in the Queen's Regulations, paragraphs 420 and 421, relative to the selection of pioneers, but adopting the distribution of trades laid down in paragraph 2 of these Regulations. Should they be unable to select competent tradesmen for the purpose from the regiments under their command, they will report to the Adjutant General, in order that, if possible, the number required may be made up by transfers from other corps. On a foreign station this report should be made to the general officer in command, who will, if possible, obtain volunteers, who may be qualified, from other corps serving on the station.

9. The tools required for the employment of pioneers can be obtained under Clause 136 of Army Circulars, 1869; and materials required for "repairs to barracks can be supplied (through the Royal Engineer Department) by the triennial contractor.

10. The pioneers may be employed on work for the Royal Engineer or Control Department:—

1. By contract or agreement made by the pioneer serjeant.
2. By piecework.
3. By daywork or by the hour.

11. Should the pioneer serjeant require workmen in addition to the pioneers, he will apply to the adjutant for the requisite assistance, the men so employed being, as much as possible, exempted from ordinary regimental duty.

12. The work required to be done for the public service is to have priority, but when circumstances admit, work may be done for the regiment, and even private work for officers or others if approved of by the commanding officer.

13. The pioneer serjeant should be directed to afford every encouragement to tradesmen who may not be pioneers, to avail themselves of the advantages offered by the regimental workshops by employing them for short periods when practicable.

14. The apportionment of money earned by contract, and the payment of the tradesmen generally, must be carried out by the pioneer serjeant under the general superintendence of an officer to be appointed by the commanding officer of the battalion.

15. A fund to meet the cost of repairing or replacing tools, or other contingent expenses, will be kept by the regimental paymaster, and, in order to establish this fund, a contribution, not exceeding 5 per cent., to be fixed by the commanding officer, should be deducted from payments made for all work performed. This fund should not at any time exceed 30 *l.*

16. The arrangements made should be entirely with a view to the system being self-supporting, not taking into account the ordinary regimental pay or allowances received by the non-commissioned officers and men as soldiers.

17. The cost of all repairs to the workshops should therefore be paid out of the "Works Fund."

18. Whenever a commanding officer finds that suitable workshops do not exist, he should make application to the General Officer commanding the district, who, after consulting the Commanding Royal Engineer and District Controller, will take the necessary steps with a view to obtaining authority for the appropriation, fitting up, or construction of such rooms as may be necessary.

19. It is desirable that, under the general control of the commanding officer, an officer should be appointed to supervise the workshops, and to act as a referee for the pioneer serjeant in all cases of doubt or difficulty with respect to the apportioning of funds, or other matters connected with his duties.

20. General officers making half-yearly inspections will examine and report upon the system adopted in each battalion for carrying out these instructions.

RETURN of the Number of SOLDIERS belonging to Regiments at Home who have been tested in the Trades of Carpenter, Smith, Bricklayer and Mason, Plumber, Painter

REGIMENT.	CARPENTER.					SMITH.					BRICKLAYER	
	1.	2.	3.	4.	0.	1.	2.	3.	4.	0.	1.	2.
Grenadier Guards - - 1st Battalion - -	- -	1	1	- -	1	- - -	2	1	- - -	1	- -	1
" - - 2nd " - -	- -	1	- -	- -	- -	- - -	- - -	- - -	- - -	- - -	- -	3
" - - 3rd " - -	- -	4	2	- -	- -	- - -	- - -	4	2	- - -	- -	5
Coldstream Guards - 1st " - -	- -	8	4	- -	- -	- - -	1	4	- - -	- - -	- -	1
" - - 2nd - - -	- -	9	4	- -	- -	- - -	3	1	- - -	- - -	- -	three bricklayers, three masons.
Scots Fusilier Guards - 1st " - -	—	—	—	—	—	—	—	—	—	—	—	—
" - 2nd " - -	one v. good	one good -	five middling	- -	one indifferent	- - -	(a) two good -	five middling -	- - -	- - -	- -	two good stone cutters, one plasterer.
Depôt, 1st Battalion 2nd Foot - - -	- -	- -	- -	- -	- -	- None -	- None -	—	—	—	—	—
2nd Battalion - - 2nd " - - -	- -	1	2	1	- -	- - -	4	3	1	- - -	- -	- - -
2nd " - - 3rd " - - -	- -	2	2	1	- -	- - -	one locksmith -	one coachsmith -	—	—	—	—
1st " - - 4th " - - -	- -	4	4	- -	- -	- - -	- - -	1	- - -	- - -	- -	- - -
2nd " - - 5th " - - -	- -	2	- -	- -	- -	- - -	1	- - -	1	—	—	—
2nd " - - 6th " - - -	2	2	2	1	- -	- - -	3	1	- - -	- - -	- -	7
Depôt, 1st Battalion 7th " - - -	- -	- -	- -	1	- -	- - -	- - -	- - -	- - -	- - -	- -	- - -
2nd Battalion - - 7th " - - -	- -	2	1	- -	- -	1	one whitesmith -	1	3	- - -	- -	- - -
1st " - - 8th Depôt - - -	- -	- -	1	- -	- -	- - -	- - -	- - -	- - -	- - -	- -	- - -
2nd " - - 8th Foot - - -	- -	2	2	- -	- -	- - -	one blacksmith -	- - -	- - -	- - -	- -	one bricklayer -
2nd " - - 9th " - - -	- -	1	1	- -	- -	- - -	1	- - -	- - -	- - -	- -	1
1st " - - 13th Depôt - - -	- -	- -	1	—	—	—	—	—	—	—	—	—
2nd " - - 13th Regiment - -	- -	2	- -	- -	- -	- - -	one tinman -	3	- - -	- - -	- -	- - -
2nd " - - 17th " - - -	- -	- -	- -	- -	- -	- - -	- - -	- - -	- - -	- - -	- -	- - -
1st " - - 23rd " - - -	- -	2	1	2	- -	- - -	- - -	- - -	- - -	one blacksmith -	- -	1
23rd Regiment - 2nd Battalion - -	- -	2	- -	two, 1 joiner	- -	1	3	1	1	- - -	- -	one, two bricklayers.
25th " - - 1st " - - -	- -	4	- -	- -	- -	(d) one blacksmith	five blacksmiths	- - -	- - -	- - -	- -	- - -
25th " - - 2nd Battalion Depôt -	- -	- -	- -	- -	- -	- - -	- - -	- - -	- - -	- - -	- -	one mason -
27th Regiment - - - - - - -	- -	1	1	1	- -	- - -	- - -	- - -	- - -	- - -	- -	- - -
33rd Regiment - - - - - - -	- -	- -	1	- -	4	- - -	one whitesmith -	one blacksmith -	one blacksmith -	2	- -	2
34th " - - - - - - -	- -	- -	- -	1	- -	- - -	2	4	- - -	- - -	- -	- - -
42nd " - - - - - - -	- -	3	- -	4	- -	- - -	2	one, one blacksmith.	3	8	- -	one mason -
46th " - - - - - - -	- -	3	4	1	- -	- - -	1	2	- - -	- - -	- -	- - -
50th " - - - - - - -	2	1	1	- -	- -	one whitesmith, one bellhanger.	one, one whitesmith.	one blacksmith, two tinmen.	- - -	- - -	- -	one bricklayer, two masons.
57th " - - - - - - -	1	1	4	3	- -	- - -	2	1	1	- - -	- -	- - -
60th " 4th Battalion - - -	- -	3	1	- -	- -	- - -	- - -	- - -	- - -	- - -	- -	- - -
67th " - - - - - - -	- -	1	1	5	- -	- - -	one tin and coppersmith.	one blacksmith -	three blacksmiths, one locksmith.	- - -	- -	two bricklayers, one bricklayer & plasterer
82nd " - - - - - - -	- -	- -	- -	- -	- -	- - -	one blacksmith -	- - -	- - -	- - -	- -	(g) 1
90th " - - - - - - -	- -	- -	3	- -	- -	- - -	(h) 1	one blacksmith -	one blacksmith -	- - -	- -	- - -
91st " - - - - - - -	(i) three, one joiner.	3	3	- -	- -	- - -	1	1	1	- - -	2	one stonecutter -
94th " - - - - - - -	- -	- -	- -	- -	- -	- - -	- - -	two, one bellhanger.	- - -	- - -	- -	two bricklayers -
97th " - - - - - - -	2	- -	2	- -	- -	- - -	- - -	- - -	1	- - -	- -	- - -
101st " - - - - - - -	- -	- -	- -	- -	- -	- - -	- - -	- - -	- - -	- - -	- -	- - -
2nd Battalion Rifle Brigade - - -	- -	1	5	1	- -	- - -	- - -	three blacksmiths	two blacksmiths	0 whitesmith, 0 blacksmith.	- -	one mason, one bricklayer.
" " Depôt - - - -	- -	1	2	2	- -	- - -	- - -	one coppersmith	four blacksmiths	0 blacksmith -	- -	one bricklayer -
4th Battalion Rifle Brigade - - - -	- -	3	2	3	- -	- - -	- - -	3	1	- - -	- -	1
22nd Regiment, 2nd Battalion - - -	- -	1	1	4	- -	- - -	- - -	- - -	- - -	- - -	- -	- - -

and Glazier, or Shoeing Smith, and showing Degrees of Proficiency, 1, 2, 3, 4, 0, according to the Classification used for Men of the Royal Engineers of similar Trades.

AND MASON.			PLUMBER, PAINTER, AND GLAZIER.					SHOEING SMITH.					
3.	4.	0.	1.	2.	3.	4.	0.	1.	2.	3.	4.	0.	
- - -	- - -	- -	- -	1	3	- -	- -	- -	- -	1	—	—	
- - -	- - -	- -	- -	2	—	—	—	—	—	—	—	—	
7	1	- -	- -	- - -	3	- -	- -	- -	- -	- -	1	—	
1	1	- -	- -	- - -	1	- -	- -	- -	- -	1	—	—	
three bricklayers, one mason.	- - -	- -	- -	4	- -	- -	- -	- -	- -	3	—	—	
—	—	—	—	—	—	—	—	—	—	—	—	—	
two middling, one stonecutter.	two indifferent -	one very indifferent.	- -	three good, one plumber.	two middling -	- -	one indifferent	- -	- -	- -	- -	- -	(a) Men not classified as 1, 2, 3, 4, 0, but as middling, good, indifferent, &c.
—	—	—	—	—	—	—	—	—	—	—	—	—	
two bricklayers -	one mason -	- -	- -	- -	- -	- -	- -	- -	- -	- -	1	—	
—	—	—	—	—	—	—	—	—	—	—	—	—	
- - -	two bricklayers, one mason.	- -	- -	two painters and glaziers.	one painter, one glazier.	two painters -	—	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	—	—	—	—	
- - -	1	- -	- -	(b) 5	- -	- -	- -	- -	- -	- -	- -	- -	(b) One of these only a slight knowledge of plumbing.
- - -	1	- -	- -	- - -	- -	- -	- -	- -	1	—	—	—	
- - -	one bricklayer, one mason.	- -	- -	one painter -	one painter and glazier.	two painters, one plumber and glazier.	- -	- -	1	—	—	—	
1	- - -	- -	- -	- - -	one painter -	—	—	—	—	—	—	—	
- - -	- - -	- -	- -	one painter -	- -	- -	- -	(c) one shoeing smith		- -	- -	- -	(c) No means of testing.
- - -	- - -	1	- -	one painter -	one painter -	one painter -	—	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	—	—	—	—	
one mason and slater.	- - -	- -	one plumber -	- - -	one painter -	one glazier -	- -	- -	- -	- -	- -	1	
- - -	- - -	- -	- -	- - -	- -	- -	- -	- -	- -	- -	- -	- -	
- - -	- - -	3	- -	1	one, three painters.	—	—	—	—	—	—	—	Men not tested; no tools.
- - -	- - -	- -	- -	one painter and glazier.	—	—	—	—	—	—	—	—	
two bricklayers -	- - -	- -	- -	one painter -	- -	- -	- -	-	- -	- -	- -	- -	(d) A superior tradesman.
—	—	—	—	—	—	—	—	—	—	—	—	—	
1	- - -	- -	- -	- - -	- -	- -	one painter and glazier.	- -	- -	- -	- -	- -	C. R. E. Colchester reports that any number of men who can be taught rough painting could be employed; and there are many men in the 27th who, although not enlisted as tradesmen, are practically such, whom it would be desirable to test, there being plenty of work for carpenters and painters.
- - -	three bricklayers	2	- -	- - -	- -	1	—	—	—	—	—	—	
four bricklayers -	one mason -	- -	- -	(e) 1	five painters -	1	- -	- -	- -	- -	- -	- -	(e) Grainer also.
nine masons, one bricklayer.	- - -	1	- -	(f) one painter, three plumbers.	- -	three painters	- -	- -	- -	- -	- -	- -	(f) Paperhanger.
two bricklayers, one mason.	- - -	- -	- -	one painter and glazier.	—	—	—	—	—	—	—	—	
one bricklayer, one mason.	one bricklayer, one mason.	- -	- -	- - -	one painter -	one painter -	—	—	—	—	—	—	
two bricklayers -	three bricklayers, three masons.	- -	- -	4	- -	2	- -	- -	- -	3	- -	- -	Those classed as 4 could not be employed on any but very rough work.
- - -	- - -	- -	- -	- - -	one painter -	—	—	—	—	—	—	—	
two bricklayers -	one bricklayer, two masons.	- -	- -	- - -	four painters -	five painters, one painter and glazier.	- -	- -	- -	- -	1	—	
- - -	- - -	- -	- -	one plumber and painter.	- -	- -	- -	- -	- -	- -	- -	- -	(g) Stonecutter only.
two masons, two bricklayers.	- - -	- -	- -	one painter and glazier.	two painters -	- -	- -	- -	- -	- -	- -	- -	(h) A shoeing smith also.
two stonecutters	1	- -	3	3	1	1	- -	- -	- -	- -	- -	- -	(i) One a sawyer.
one rubble mason, two stonecutters.	- - -	- -	one painter -	one painter -	one painter -	—	—	—	—	—	—	—	
one stonecutter -	one bricklayer, one stonecutter.	- -	- -	one plumber, two painters and glaziers.	- -	one plumber -	- -	- -	- -	- -	1	—	
1	1	—	—	—	—	—	—	—	—	—	—	—	
one mason -	one bricklayer, four masons.	- -	- -	one painter and glazier, one mason.	two painters and glaziers, two painters.	one painter and glazier.	—	—	—	—	—	—	
- - -	one bricklayer -	- -	- -	one painter and glazier.	—	—	—	—	—	—	—	—	
1	2	- -	- -	3	1	1	two painters, 0 plumber and painter.	—	—	—	—	—	
2	1	3	- -	1	1	2	2	- -	1	—	—	—	

ARMY (MILITARY LABOUR, &c.)

COPY of the REPORT and PROCEEDINGS of the COMMITTEE appointed by His Royal Highness the Commander in Chief "to draw up REGULATIONS for extending the System of 'MILITARY LABOUR to MILITARY WORKS,' and for enabling every Man in the Army desirous of Working at a Trade to obtain Employment."

(*Mr. Hanbury-Tracy.*)

Ordered, by The House of Commons, *to be Printed,*
1 *March* 1871.

62.

Under 1 *oz.*

ARMY (GYMNASTICS).

RETURN to an Address of the Honourable The House of Commons, dated 31 May 1870;—*for*,

"COPY of REPORT of the DIRECTOR of GYMNASTICS, on the GYMNASTIC INSTRUCTION of the ARMY, for the Year 1869."

War Office, 31 May 1870.

EDWARD CARDWELL.

REPORT of the DIRECTOR of GYMNASTICS, on the GYMNASTIC INSTRUCTION of the ARMY, for the Year 1869.

DURING the past year instruction has been regularly and systematically carried on in the several gymnasia in operation, and with satisfactory results as regards increased activity and improved muscular and physical development in the men who have passed through a course.

In proof of this, the opinions of the commanding and medical officers of all the regiments that have had men exercised are annexed and marked (A.); they will be found unanimous as to the beneficial effects resulting from the course of training on the general health and efficiency of the men, the only regret being, that facilities for carrying on the practice are still so limited, and that no opportunities are afforded of passing the men through an annual course, in addition to the preliminary training of the recruits.

Only one new gymnasium was opened, at Portsmouth, in which work commenced on the 1st of April, but gymnasia are in course of construction at the undermentioned stations, some of which may be expected to be completed during the course of the current year, and the rest early in 1871.

Gosport (about to be opened).	Pembroke.
Windsor.	Preston.
Manchester.	Sheffield.
Maidstone.	

The duration of the course, or rather the number of hours of attendance of the different classes vary so much, that it is almost impossible to find reliable data on which to contrast the relative increase of recruits and trained soldiers; but it may be remarked generally, that all classes increase in muscular development, and during the winter months all increase in weight; in summer a small proportion lose weight during very warm weather. A few notable instances of increase in weight and measurement will be given in reporting upon the gymnasia in detail. The increase in activity cannot be described on paper, but must be seen to be appreciated.

The new classification of the instructors as laid down in Army Circular, 1868, clause 95, and which came in force on 1st of January 1869, appears to work satisfactorily, though some little difficulty is at times experienced in obtaining the services of regimental and assistant instructors out of the garrisons in which gymnasia are placed. In a short time, however, it is hoped that each regiment will be provided with one or more qualified instructors, and then this difficulty will cease to exist.

The several officers superintending gymnasia have been zealous in the performance of the duties, and the conduct of the instructors has been excellent.

1. *Aldershot.*—

1. *Aldershot.*—All the regiments, both infantry and cavalry, have had classes of men continuously under instruction; the classes being formed of recruits, if possible, when no recruits were available of duty men, 30 men being taken from each regiment at a time, and the results in increased development and activity have been very satisfactory.

A remarkable instance of average increase is shown in a class of 16 men of the 34th Foot, being

Weight.	Chest.	Fore Arm.	Upper Arm.	——
Lbs.	*In.*	*In.*	*In.*	
$1\frac{1}{4}$	$3\frac{7}{8}$	$\frac{6}{8}$	$1\frac{1}{8}$	
3	$5\frac{6}{8}$	$\frac{6}{8}$	1	Greatest individual increase, Private White.

The preparation of officers for the duties of superintendent, and of non-commissioned officers for those of instructor, has been steadily carried on.

Eight officers commenced the course of instruction, but only four completed it, and obtained certificates of qualification, the remainder rejoining their regiment before completing.

Thirteen non-commissioned officers of cavalry obtained certificates as fencing instructors, 12 of whom qualified as instructors in gymnastics also; 11 remain under instruction.

Forty-four infantry non-commissioned officers and men commenced the course of training to qualify as instructors, out of which number 43 obtained certificates, 24 first class, and 19 second; one discontinued from ill-health or inability to qualify; 17 remain under instruction. Some of these non-commissioned officers, particularly those from the Guards, present remarkable instances of increase.

In addition to the above, instruction in fencing has been afforded to any non-commissioned officers in camp who desired it, and a good many availed themselves of the privilege.

The gymnastic course is very popular with the men, and the gymnasium is largely attended by the voluntary classes, the average daily attendance being 7 officers, 10 non-commissioned officers, and 60 men. Fencing, single stick, and boxing are also much practised by the officers and non-commissioned officers during the voluntary hours.

2. *Chatham.*—The superintendent of the Chatham Gymnasium reports that the system of training has been carried on during the year with signal success.

3. *St. John's Wood.*—The requirements for the duties in London necessitate a suspension of instruction during the drill season, *i. e.*, from March to August; during the remainder of the year two companies are detached to the St. John's Wood Barracks at a time, and go through a gymnastic course, lasting one month. The results can scarcely be expected to equal those obtained during the usual three months' course, but the measurement returns show an increase proportionate to the length of the courses, and the men gain considerably in activity and confidence. The gymnasium is open for voluntary practice during the summer, but few men avail themselves of it, owing to its distance from the other barracks.

4. *Chelsea.*—The regular classes here also cease attending during the drill season, though the gymnasium is open for voluntary classes, and is well attended. The course of instruction is the same as at St. John's Wood, that is to say, two companies at a time attend daily for a month, and the results as shown by the measurement returns are satisfactory.

5. *Woolwich.*—The system of training has been carried on with the utmost regularity, and the superintendent reports the progress to have been most satisfactory. By the advent of the Depôt Brigade from Warley, the number of men requiring instruction has been largely increased, and it is much to be desired that a good gymnasium, capable of accommodating from 100 to 150 men at a time, should be erected at this station to replace the present one, which is small, inconvenient,

inconvenient, and ill supplied with apparatus. Large numbers of officers and men attend the voluntary classes.

6. *Warley.*—In my annual report for last year I was compelled to notice that the attendance of the recruits from the brigade of Guards was not satisfactory, being far too limited to be of any real service in strengthening and developing them. After my inspection of the gymnasium in April, I had the honour of addressing a letter to the officer commanding the brigade, in which I recommended that the recruits should be required to attend four or five times a week, instead of twice as heretofore, but no alteration in the number of hours of attendance has yet been made. The gymnasium is large enough, and the staff of instructors sufficient to give every recruit one hour's instruction daily; and I, therefore, again beg to recommend that that amount of attendance should be made compulsory, as it appears to be very desirable that the recruits of the brigade of Guards should profit by the training to the same extent as recruits of the Line, with whom it is found to be so beneficial. I may add that the measurement returns show a great many men with girth of chest, very small in proportion to height, to whom the full course would be particularly advantageous.

7. *Colchester.*—Instruction is regularly carried on, and the results are satisfactory. Some accidents were reported early in the year, by the surgeon of the 8th depôt battalion, but on investigation they were found to be of a very trifling nature. The general increase in development is fair, but the increase in weight among the recruits exercised in this gymnasium is remarkable, numerous instances occurring of an increase of over 14 lbs. in the three months. In one class the average increase was 13 lbs., and in several others the average was 7 lbs., and upwards.

8. *Dover.*—The superintendent reports that the progress has been most satisfactory, that the men who have been instructed have attained great proficiency in the exercises, and at the termination of the course have invariably shown a decided increase in all their measurements, and appear to be greatly benefited by the training in every respect.

9. *Shorncliffe.*—The system of instruction is regularly carried on, the progress made is satisfactory, and the results good. At this gymnasium also the general increase in weight is remarkably large. The voluntary classes are well attended.

10. *Walmer.*—The barracks at this station having been transferred to the Admiralty, the gymnasium was closed, and handed over on the 8th March. During the time it was open, about six months, it worked most satisfactorily.

11. *Winchester.*—The system of instruction is regularly carried on, and with good results. The course is popular with the men, and the voluntary classes are well attended. Private Marsh, a recruit of the 1/60th Rifles, increased 27 lbs. in weight during his three months' course.

12. *Parkhurst.*—The system of instruction is regularly carried on, and the results are satisfactory.

13. *Canterbury.*—Instruction in gymnastics and fencing is conducted in a satisfactory manner. Every recruit joining the depôt is put through a course in both, and with excellent results, the increase in measurement being almost always above the average, and in some cases remarkably good.

The following are some instances extracted from the measurement returns :—

———	Weight.	Chest.	Fore Arm.	Upper Arm.
	Lbs.	*In.*	*In.*	*In.*
Cornet Lysaght, 21st Hussars	16	3	1	2
Private Rogers, 2nd Dragoon Guards	25	$2\frac{6}{8}$	$0\frac{6}{8}$	$0\frac{6}{8}$
„ Ellsworth, 11th Hussars	22	$2\frac{6}{8}$	$1\frac{3}{8}$	$1\frac{6}{8}$
„ Voil, 20th Hussars	7	$3\frac{4}{8}$	1	$1\frac{4}{8}$
„ Tucker, 18th Hussars	7	3	1	$1\frac{4}{8}$
„ Traggett, 18th Hussars	8	$3\frac{7}{8}$	$1\frac{3}{8}$	$1\frac{4}{8}$

 The

The increase in weight of some of these is more than the officer commanding a light cavalry corps would probably desire.

14. *Fermoy.*—The system of instruction is regularly carried on, but the results in increased development were not so satisfactory as at most of the other gymnasia; this may partly be accounted for by the unusually small size of most of the recruits of the 39th Foot, 151 of whom, out of 341 who commenced a course, were 33 inches and under in girth of chest.

15. *Plymouth.*—This gymnasium being small, and only scantily supplied with apparatus, admits of but a limited number of men receiving instruction at a time. Its situation in the centre of the town also prevents running being practised.

The system of training, however, as far as practicable, is carried on in a regular manner; but the increase in development is not large, and during the summer an unusually large number of men diminished in weight.

16. *Aberdeen.*—Instruction is regularly carried on, and the results are good, judging from the measurement returns, which always show a large increase in weight and physical development.

17. *Curragh.*—The system of instruction is regularly carried on, and the results are satisfactory. The exercises are popular, and the voluntary classes well attended. Several non-commissioned passed through a course of training, and qualified as instructors.

18. *Portsmouth.*—This most commodious gymnasium was opened on the 1st April; it is well fitted with apparatus, and is admirably adapted for the requirements of the garrison.

The superintendent reports that the working of the system of training has been most satisfactory and complete, and that the development of the men has been very good.

He suggests the formation of a running ground, for which there is ample space in the waste land adjoining the gymnasium, but which is at present too rough to be used for that purpose. I imagine, however, that a portion of it might be levelled sufficiently to make it available at very trifling expense.

Letters from the commanding and medical officers of the 1/25th, 33rd, and 46th Regiments express most favourable opinions as to the beneficial effects of the system of training.

19. *Royal Military Academy.*—Gymnastic instruction is regularly and systematically carried on, and with wonderfully good results in improving the physical powers and increasing the activity and confidence of the gentlemen cadets, as the following extracts from the measurement returns sufficiently show.

———	Weight.	Chest.	Fore Arm.	Upper Arm.
	Lbs.	*In.*	*In.*	*In.*
Midsummer Class:				
50 Gentlemen Cadets, average increase - -	9	$1\frac{2}{8}$	$\frac{6}{8}$	$1\frac{4}{8}$
Winter Class:				
41 Gentlemen Cadets, average increase - -	9	$1\frac{4}{8}$	$\frac{6}{8}$	$1\frac{3}{8}$

The gymnastic exercises are popular, the voluntary classes are well attended, and some of the gentlemen cadets attain a very high degree of proficiency, but very little progress is made in fencing.

20. *Royal*

20. *Royal Military College.*—The following is the average increase of the gentlemen cadets who passed through a course during the year.

	Weight.	Chest.	Fore Arm.	Upper Arm.
	Lbs.	*In.*	*In.*	*In.*
Midsummer Class:				
80 Gentlemen Cadets, average increase - -	6	1 5/8	0 6/8	1
Winter Class:				
136 Gentlemen Cadets, average increase - -	8 1/2	2 2/8	0 6/8	1 1/8
The increase of Gentleman Cadet, Radford, was	13	5 1/8	1 3/8	1 5/8

During the last term 38 gentlemen cadets increased 12 lbs. and upwards in weight; two increased 20 lbs. and one 21 lbs.; 40 increased three inches and upwards in girth of chest; 17 increased four inches and upwards; and one over five inches. The system of training is regularly carried on, and the progress made in gymnastics is good, but very little fencing is practised.

Malta.—By the returns received from this station it appears that three officers and 347 non-commissioned officers and men passed through a course, and with satisfactory results, judging from the measurement returns, which always show an increase in development, and generally in weight, notwithstanding the heat of the climate.

It would be a great boon to the garrison if a good covered gymnasium were built here, as the amount of apparatus now in use is very limited, and being erected in the open air, instruction is necessarily carried on with considerable inconvenience at all times.

Canada.—The system of training was carried on regimentally in the First Battalion, Rifle Brigade, whilst stationed at Ottawa; but in forwarding Gymnastic Returns for the quarter ending 31st December 1869, the commanding officer reports that there being no provision for gymnastic instruction at Montreal, where the regiment is now stationed, the course which has been continuously carried on for eight years has to be discontinued.

No information has been received from any other station in Canada.

India.—It can scarcely be said that the system of gymnastic instruction has yet commenced in India. The last returns received (being for quarter ending 30th June 1869) give only three officers, nine non-commissioned officers, and 425 men as under instruction, and these are confined to the under-mentioned regiments, working with apparatus purchased out of private or regimental funds, in some cases supplemented by a small Government grant.

	Officers.	Non-commissioned Officers.	Men.
1/1st Foot - - - - - - - - -	1	- -	53
1/19th " - - - - - - - - -	- -	1	50
2/19th " - - - - - - - - -	- -	- -	51
2/21st " - - - - - - - - -	1	- -	15
38th " - - - - - - - - -	- -	5	15
85th " - - - - - - - - -	1	- -	68
93rd " - - - - - - - - -	- -	3	9
103rd " - - - - - - - - -	- -	- -	58
104th " - - - - - - - - -	- -	- -	32
108th " - - - - - - - - -	- -	- -	34
3rd Rifle Brigade - - - - - - - - -	- -	- -	40
	3	9	425

No gymnastic instruction of any kind is going on in all the other regiments.

By the last communication from the director of gymnastics in India, it appears that only one of the experimental gymnasia has yet been erected at Lucknow, and even that has not yet been fitted with apparatus or supplied with stores. Of the three other experimental gymnasia, the erection of which has been sanctioned, and which it is said are to be at Calcutta, Umballa, and Rawul Pindee. At Umballa the walls have been run up, but work has been suspended for lack of timber for rafters and beams. At Rawul Pindee the building has commenced.

At Calcutta, not yet begun.

A barrack gymnasium at Allahabad is ready, with the exception of apparatus; and a number of other barrack gymnasia are being built, and are all, more or less, advanced in construction.

In the Bombay Presidency there is no gymnasium whatever, though two experimental gymnasia are in course of construction at Poonah and Mhow; and in the Madras Presidency, only at Bangalore, where there are two small out-door gymnasia, very inadequately fitted with apparatus, and totally useless for carrying on the regulated system; and at Cannanore, where there is a small regimental gymnasium, constructed almost entirely at the expense of the officers and men of the 1st Royal Regiment. In writing of this gymnasium, Captain Stockwell says, "That the result is highly beneficial to those instructed will be testified to by the general appearance of the men, and the measurement and health returns; and I am likewise informed by the commanding officer that it has been conducive to a marked improvement in the conduct of the men, thus abstracted from idle and, perhaps, vicious habits, to a laudable emulation in a health-giving exercise and recreation."

The following extract of a measurement return received from the 85th Regiment, stationed at Meean Meer, of three men who went through a course of training extending over six months, to qualify as instructors, shows that the increase in muscular development, and even in weight, during a course of gymnastic training is almost as great as in this country.

———	Weight.	Chest.	Fore Arm.	Upper Arm.
	Lbs.	*In.*	*In.*	*In.*
Private Cochrane - - - -	13½	2⅜	0⅞	1⅞
„ Exley - - - - -	7	2⅝	1⅛	1⅝
„ Mullins - - - -	6	4⅛	1	1⅜

The running drill was practised, during the cold season of 1869–9, by all the infantry regiments in India, and in the return that was furnished (comprising 45 regiments) from 20, the opinions of the commanding and medical officers were that the practice was decidedly beneficial to the men; from 24 that it was not prejudicial to their health; from only one the opinion was adverse, the medical officer of the 82nd Foot, stationed at Aden, reporting that the climate being extremely depressing, the running drill was found to cause great exhaustion, and the practice was therefore discontinued.

While the construction of gymnasia is still only proceeding, and before any definite arrangements have been made with regard to the employment of officers and non-commissioned officers as superintendents and instructors, I would again urge with reference to my letter, dated the 28th July 1869, the importance of a sufficient staff of instructors in each gymnasium, and the absolute necessity for the appointment of superintendents at each of the experimental gymnasia, and at any other large stations where two or more regiments are quartered.

The Government has sanctioned the appointment of a director of gymnastics for India, and an assistant director in the Bombay and Madras Presidencies, but I venture to submit that this amount of intelligent supervision will not suffice to guard against accidents.

In the book of instructions the course of exercises is carefully graduated, and if implicitly followed would render accidents almost impossible, but the instructors,

instructors, though careful and attentive as a rule, are apt to push forward the learners too rapidly, and departing from the safe progressive course, set them exercises that are above their capacity; thus exercises that may be perfectly safe and easy to men who have had two months' practice, would be dangerous to beginners, and it is here that the supervision of an officer is necessary; without such supervision I fear that accidents may happen which would bring discredit on the system of training, and possibly altogether deprive the soldier, in India, of benefiting by it.

Fencing.—With regard to fencing in cavalry regiments, the director of gymastics, in India, reports that it has not made the progress that might be expected; this he attributes to the following causes:—

1st. The difficulties and delay in procuring fencing materials, the supply of which, up to January 1869, was always incomplete and inadequate for the requirements of regiments.

2nd. To the absence of a well-defined standard of excellence, which hitherto could not be enforced from want of fencing materials.

3rd. To the falling off in proficiency, in some cases from want of practice, and to the incompetence in others, of the instructors and assistant instructors in fencing.

The first of these causes has now been done away with, each regiment having an adequate supply of fencing materials.

The second cannot be met until a remedy is applied to the third cause, to effect which Captain Stockwell proposes that the instructor of fencing, and two assistants from each cavalry regiment, should be brought together to the gymnasium at Lucknow, now quite ready as regards the school of arms, and there put through a course of instruction. I would strongly recommend that his proposal should be sanctioned.

Fencing.—The returns of fencing, in cavalry at home, show that a fair amount of progress has been made during the year, and that now only three regiments have more than 50 men uninstructed; that is to say, that almost all the men in the cavalry have gone through an elementary course, but few have done more, and there is still much room for improvement; not even all the instructors themselves can be called good fencers, though they can all instruct fairly, and with practice may become so, and as they increase in skill, additional proficiency may be expected in the men. Even now, I think I am justified in saying that there is a marked improvement in the skill shown in the annual competitions for swordsmanship prizes, part of which may be fairly attributed to fencing, as is shown by the more frequent use of point.

In conclusion, I beg to express my opinion that the system of training is working in a most satisfactory manner, thousands of men have benefited by it, some of them to a really marvellous extent, particularly learning instructors, who pass through a long and arduous course. The number of accidents that have occurred is so small, and the effects so trifling, as scarcely to need notice; and not a single man, as far as I am aware, has received a permanent injury.

(signed) *T. Hammersley*, Lieut. Colonel,
Director of Gymnastics.

Gymnasium, Aldershot,
31 January 1870.

(A.)

OPINIONS of COMMANDING OFFICERS of REGIMENTS with regard to the Effects of the Gymnastic System of Training upon the Efficiency of the Recruits.

Regiment.	Name of Commanding Officer.	OPINION.
7th Dragoon Gds.	Lieut. Col. Clarke -	Considers the system of great advantage to the young soldiers, and that it assists them very materially when learning the sword exercise.
6th Dragoons -	Lieut. Col. The Hon. C. W. Thesiger.	Considers the system most beneficial to the recruits; but thinks that the course should not commence till after they have been dismissed foot drill.
2/3rd Foot -	Lieut. Col. Pearson -	Has no doubt about the utility and advantage of the training, particularly with recruits; but thinks that to be of any permanent service, it should be kept up throughout a soldier's career.
2/7th Foot - -	Lieut. Col. Cooper -	Is of opinion that a course of gymnastics increases the efficiency of the soldiers in a marked degree; and recommends the establishment of regimental gymnasia where instruction could be continuously carried on.
1/12th Foot -	Colonel Hamilton -	Considers the system most beneficial to the muscular and physical development of the men, and conducive to their health and general efficiency.
2/13th Foot -	Lieut. Col. Maunsell -	Considers the system beneficial to the efficiency and physical development of the men.
2/23rd Foot -	Lieut. Col. The Hon. J. Mostyn.	Concurs in the opinion of the surgeon of the battalion that the course of training is in every way calculated to improve the muscular development of the young soldier.
35th Foot - -	Major Tisdale - -	Is of opinion that the course of training is very advantageous in developing the strength and activity of the soldier.
4/60th Rifles -	Major Bowles - -	Considers the system beneficial, and recommends that all soldiers under 30 years of age should be compelled to go through a course annually.
67th Foot - -	Col. Thomas, C.B. -	Entirely approves of the system of gymnastics as carried out in the service.
2nd Battalion Rifle Brigade.	Col. Glyn, C.B. - -	Considers the system decidedly advantageous and beneficial for soldiers.
4th Battalion Rifle Brigade.	Col. Elrington - -	Expresses no opinion.
CHATHAM:		
27th Foot - -	Lieut. Col. Freer -	Considers the gymnastic training and running drill highly beneficial as regards physical development, and also an excellent preparation for the musketry course.
WARLEY:		
2/9th Foot - -	Major Darling - -	The gymnastic instruction has certainly assisted in the setting up and efficient improvement of the recruit.

Regiment.	Name of Commanding Officer.	Opinion.
Dover:		
1/4th Foot - -	Col. Cameron, C.B. -	The course of gymnastics has been most beneficial to the men in improving their physical power and general health.
91st Foot - -	- - - - - -	The physical appearance and efficiency of the men is much improved by a course of gymnastics.
97th Foot - -	Major Cannon - -	Is of opinion that the course tends to the health of the soldier, as well as to the efficiency of some men.
Portsmouth:		
1/25th Foot -	Lieut. Col. Pears -	Considers that the course is most beneficial to the physical efficiency of the men.
33rd Foot - -	Major Fanshawe -	Considers the course of training beneficial; it is also popular with the men.
40th Foot - -	Major Nicholas - -	Coincides with the medical officer's opinion as to the beneficial effect of gymnastic training on the health and efficiency of the men.

Gymnasium, Aldershot,
January 1870.

F. Hammersley, Lieut. Col.,
Director of Gymnastics.

OPINIONS of the Medical Officers with regard to the Effects of the System of Gymnastic Training on the General Health and Physical Development of the Recruits.

Regiment.	Name of Medical Officer.	Opinion.
7th Dragoon Gds.	Assistant Surgeon Williamson.	Considers the system of great advantage to the men, and that in the majority of cases there is a marked improvement in their physical development.
6th Dragoons -	Surgeon Armstrong -	Is unable to say whether the physical improvements observable in the recruits is due more to gymnastics than to their general duties and drill. Considers it would be better if the recruit commenced gymnastics after being dismissed foot drill.
2/3rd Foot - -	Surgeon Major Crocker	The general physique of all the men who have passed through the course appears to have been improved, with one exception; and one man was slightly injured, but recovered, and was able to complete the course.
2/7th Foot - -	Assistant Surgeon Mackie	Is of opinion that the course has had no prejudicial effect on the health of the men, while the increased physical development is general and manifest.
1/12th Foot -	Surgeon Abbott - -	The general physique of the men has been improved by the course of training.
2/13th Foot -	Surgeon Rendell - -	Reports that some benefit has accrued to the physical condition of the men who have been through a course.

Regiment.	Name of Medical Officer.	Opinion.
2/23rd Foot -	Surgeon Tydd - -	Reports improvements in physical development in the men who have passed through a course, and considers the system in every way calculated to improve the muscular development of the young soldier.
35th Foot - -	Assistant Surgeon Alcock.	Has a favourable opinion of the effect of gymnastic exercises, and believes that those who are thus trained at an early age acquire for life habits of physical activity and moral confidence.
4/60th Rifles -	Surgeon Longhurst -	Has observed no injurious consequences to the men who have been through a course, and is of opinion that it must tend to improve their physical and muscular development.
67th Foot - -	Surgeon Lamprey -	The advantage to the health and physical development of the men who have been through the course has been very great.
2nd Battalion Rifle Brigade.	Surgeon Major Fraser	Considers that the course of training is likely to have a beneficial effect on the efficiency and physical development of the men.
4th Battalion Rifle Brigade.	- - - - -	No medical opinion given.
Chatham:		
27th Foot - -	Surgeon Bryson - -	The course of instruction appears to have acted beneficially in improving the muscular development of the young recruit in expanding the chest, and giving greater activity and elasticity to the whole frame.
Warley:		
2/9th Foot - -	Surgeon Thompson -	Is of opinion that the course of training promotes the physical improvement of the men, and increases their general efficiency as soldiers.
Dover:		
1/4th Foot - -	Surgeon Lane - -	The training is calculated to have the very best effect on the newly-joined growing recruit, and even on the older soldier certain benefits might be expected to arise.
91st Foot - -	Surgeon Beatty - -	Considers the system has been most conducive to the health aud efficiency of the men, and improved their physical appearance.
97th Foot - -	Surgeon Porter - -	Is of opinion that gymnastic training must be attended by benefit to the health and efficiency of troops.
Portsmouth:		
1/25th Foot -	Assistant Surgeon Gribbon.	Believes that both the health and physical development of the recruits have been greatly benefited by the course.
33rd Foot - -	Surgeon Major Sinclair	The effects of the training on the health and efficiency of the men who have gone through a course of gymnastics has been beneficial.
46th Foot - -	Assistant Surgeon Fletcher.	Considers the effect of gymnastic training on the general health and efficiency of the men (especially young soldiers) to have been beneficial.

F. Hammersley, Lieut. Col.,
Director of Gymnastics.

Gymnasium, Aldershot,
January 1870.

ARMY (GYMNASTICS).

COPY of REPORT of the DIRECTOR of GYMNASTICS, on the GYMNASTIC INSTRUCTION of the ARMY, for the Year 1869.

(*Mr. Secretary Cardwell.*)

Ordered, by The House of Commons, *to be Printed,*
31 *May* 1870.

BOMBAY BRANCH
OF THE
Royal Asiatic Society.
CLASS

265.

Under 2 oz.

FORTIFICATIONS.

BX. f. 30 - BX. f. 64

RETURN to an Order of the Honourable The House of Commons, dated 16 July 1869;—*for*,

STATEMENT "showing the SCHEDULE of the FORTIFICATIONS (PROVISIONS FOR EXPENSES) BILL as compared with the SCHEDULE of the REPORT of the COMMITTEE on FORTIFICATIONS (1869), pp. xciv to cviii inclusive, and with the SCHEDULE of the ACT 30 & 31 Vict. c. 145."

War Office, July 1869.

EDWARD CARDWELL.

(*Mr. Secretary Cardwell.*)

Ordered, by The House of Commons, *to be Printed,* 16 *July* 1869.

STATEMENT showing the SCHEDULE of the FORTIFICATIONS (PROVISIONS FOR EXPENSES) BILL as compared with the SCHEDULES of the REPORT of the COMMITTEE on FORTIFICATIONS (1869), pp. xciv to ciii inclusive, and with the SCHEDULE of the ACT 30 & 31 Vict. c. 145.

To the Right Honourable *Edward Cardwell*, M.P., Secretary of State for War, &c. &c. &c.

Sir, War Office, S.W., July 1869.

I HAVE the honour herewith to submit a schedule which it is proposed to attach to the Fortifications (Provision for Expenses) Bill, about to be laid before Parliament.

I have prepared the schedule, in conformity with your instructions, on the following principles, viz. :—

1. That the loan shall now be finally closed, and that any further expenditure on account of fortifications which may hereafter be proposed should be submitted to Parliament in the usual manner in the Estimates.

2. That the total amount to be raised by loan shall not exceed that of the total Estimate in the schedule of the Act of 1867.

3. That any works which have been provided for in previous Acts, but which have not yet been commenced, shall, so far as the loan is concerned, be abandoned.

4. That the work already executed shall be utilised and the principal forts completed as economically as is consistent with leaving them in a sufficient state of defence.

Proceeding on these principles, I have taken as a basis the estimate in the Report of the Committee, dated 28th April 1869, of which Admiral the Honourable Sir F. Grey was President, viz., £. 7,951,437.

I have then made deductions as follows, viz.:

1st. On account of works not yet commenced (*see* Return A.), £.117,721.

2nd. On account of the adoption of the Moncrieff mode of mounting guns (*see* Return B.), £. 260,565.

3rd. On account of several items which it is proposed to defer for consideration in the annual Estimates of future years (*see* Return C.), £.184,316.

Thus leaving, with the additions, &c., shown in the accompanying Abstract (*see* Return D.), as the total sum to be provided by loan, £. 7,460,000.

It should be observed that the works include barrack accommodation for about 10,000 officers, non-commissioned officers, and men; and that the lands purchased absolutely for the works already yield an annual return of 6,647 *l.*, which sum will be increased when the works are completed.

The

The accompanying Return, marked E, shows the estimated cost of the several works, as stated in the schedule of the Act of 1867,—in the Report of the Committee on Fortifications,—and in the Bill now submitted. The Return also shows how the several reductions, now proposed in the amounts of some of the estimates of the Committee on Fortifications, have been made.

I have, &c.
(signed) *Wm. F. Drummond Jervois.*

The Right Hon. Edward Cardwell, M.P.
&c. &c. &c.
Secretary of State for War.

RETURN (A.)—WORKS not yet commenced, which it is proposed to omit from the Schedule.

Item in Report of Committee on Fortifications.	NAME OF WORK.	Total Estimated Cost of Work.
		£.
6	Gilkicker Mortar Battery - - - - - - - -	8,800
69	Chapel Bay Battery - - - - - - - - -	13,754
72	Proud Giltar Battery - - - - - - - -	6,668
73	East Moor Battery - - - - - - - - -	8,000
74	Trewent Battery - - - - - - - - -	8,718
75	Freshwater, West, Battery - - - - - - - -	8,000
91	Queenborough Battery - - - - - - - -	30,853
92	Cheney Battery - - - - - - - - - -	30,528
—	Provision of Shields at Proud Giltar and Trewent Batteries -	2,400
	Estimated Cost of Works which it is proposed to omit - - - - - - - £.	117,721

RETURN (B.)—ALTERATIONS in ESTIMATES produced by the Adoption of the MONCRIEFF System of Mounting Guns.

Item in Report of Committee on Fortifications.	NAME OF WORK.	Addition.	Deduction.
		£.	£.
5	Puckpool Battery - - - - -	2,824	
8	Southsea Battery - - - - -	6,862	
15	Cliff End Bttaery - - - - -	2,700	
20	Sandown Fort - - - - - -	3,090	
39	Drakes Island Batteries - - - -	1,416	
77	East Weir Batteries - - - - -	2,070	
81	Coalhouse Fort - - - - - -	- -	83,365
82	Cliff Fort - - - - - - -	- -	57,210
83	Shornmead Fort - - - - - -	- -	57,129
85	Grain Fort - - - - - -	5,886	
86	Grain Battery - - - - - -	3,400	
100	Spike Island - - - - - -	5,764	
101	Carlisle Fort - - - - - -	6,556	
102	Camden Fort - - - - - -	2,696	
	Iron Shields omitted in cases where it is proposed to adopt the Moncrieff system.	- -	106,125
	£.	43,264	303,829 43,264
	Saving by adoption of Moncrieff Carriages - - - £.		260,565*

* From this saving must be deducted the extra cost of the Moncrieff carriages

RETURN (C.)—ITEMS which it is proposed to defer for Consideration in the Annual Estimates of future Years.

Item in Report of Committee.	NAME OF WORKS.	Estimated Cost of Service proposed to be deferred.
		£.
8	Southsea Battery - - - - - - - - -	3,310
23	Purbrook Outworks - - - - - - - - -	14,392
27	Fort Wallington - - - - - - - - -	2,135
28	Fort Fareham - - - - - - - - - -	9,336
29	Hilsea Lines - - - - - - - - - -	3,387
100	Spike Island - - - - - - - - - -	7,531
101	Carlisle Fort - - - - - - - - - -	22,250
—	Shields for Inner Line of Sea Defences - - - -	121,975
	TOTAL Estimated Cost of Services proposed to be deferred - - £.	184,316

RETURN (D.)—ABSTRACT of the MODIFICATIONS proposed to be made in the Schedule of the Committee on Fortifications.

Reference Letter of Return.	Nature of Modifications.	Addition.	Reduction.
		£.	£
A.	Omission of works not yet commenced -	- -	117,721
B.	Saving consequent on the adoption of the Moncrieff system.	- -	260,316
C.	Services proposed to be deferred for consideration in the Annual Estimates of future years.	- -	184,316
	Reduction of Item for Incidental Expenses -	- -	4,835
	Correction of Estimate for Fort Scoveston -	1,000	
	Margin for Contingent Expenses - - -	75,000	
		76,000	567,437
			76,000
	Net Reduction - - - £.		491,437
	Estimate in Schedule of Committee on Fortifications - -		7,951,437
	Reduction as shown in this Return - - - - -		491,437
	Amount shown in the Schedule of the proposed Bill - -		7,460,000

LOAN FOR DEFENCES.

RETURN (E.), showing the COMPARISON between the Estimated COST of the WORKS as shown in the ACT of 1867, in the REPORT of the COMMITTEE on FORTIFICATIONS and in the present BILL.

NAME OF WORK.	Estimated Cost in Act of 1867.	Cost as Estimated by the Committee on Fortifications.	Sums included in Bill. To Compare with Col. 3.	Sums included in Bill. To Compare with Col. 2.	REMARKS.
1.	2.	3.	4.	5.	6.
PORTSMOUTH:	£.	£.	£.	£.	
SEA DEFENCES, OUTER LINE:					
1. Horse Sand	365,000	424,694	424,694	424,694	
2. No-man's Land	406,000	462,500	462,500	462,500	
3. Spit Bank and other Works	293,000	169,574	169,574	169,574	
4. St. Helens	145,000	118,111	118,111	141,799	
5. Puckpool		20,864	23,688	-	Added for application of Moncrieff system - - - - - £. 2,824
SEA DEFENCES, INNER LINE:					
6. Gilkicker Mortar Battery	58,000	8,800	nil	-	Omitted.
7. Gilkicker Battery		61,395	61,395	61,395	
8. Southsea	60,000	39,344	42,896	-	Added for application of Moncrieff system - - - - - 6,862 Deducted on account of Items deferred - - - - - 3,310
9. Eastney	-	17,435	17,435	64,550	
10. Lumps	-	4,219	4,219		
DEFENCES OF THE NEEDLES PASSAGE:					
11. Hurst Castle	110,000	120,821	120,821	120,821	
12. Needles Battery	-	6,958	6,958		
13. Hatherwood	-	5,825	5,825		
14. Warden Point	90,000	12,899	12,899	99,118	
15. Cliff End	-	32,714	35,414	-	Added for application of Moncrieff system - - - - - 2,700
16. Golden Hill	-	38,022	38,022		
ISLE OF WIGHT:					
COAST DEFENCES:					
17. Bembridge	-	44,578	44,578		
18. Redcliff	-	4,776	4,776		
19. Yaverland	-	20,500	20,500		
20. Sandown Fort	145,000	45,531	48,621	141,436	Added for application of Moncrieff system - - - - - 3,090
21. Sandown Battery	-	6,233	6,233	-	
22. Military Road	-	16,728	16,728		

RETURN (E.), showing the Comparison between the Estimated Cost of the Works, &c.—*continued.*

NAME OF WORK.	Estimated Cost in Act of 1867.	Cost as Estimated by the Committee on Fortifications.	Sums included in Bill. To Compare with Col. 3.	Sums included in Bill. To Compare with Col. 2.	REMARKS.	
1.	2.	3.	4.	5.	6.	
ISLE OF WIGHT—*continued.*	£.	£.	£.	£.		£.
LAND DEFENCES, OUTER LINE:						
23. Purbrook and Outworks	- -	134,392	120,000	- -	Deduct, on account of Items deferred	14,392
24. Widley	- -	93,980	93,980			
25. Southwick	- -	94,262	94,262	586,659		
26. Nelson	550,000	82,126	82,126			
27. Wallington	- -	103,195	101,060	- -	Deduct, on account of Items deferred	2,135
28. Fareham	- -	104,567	95,231	- -	Deduct, on account of Items deferred	9,336
LAND DEFENCES, INNER LINE:						
29. Hilsea	- -	139,569	136,182	- -	Deduct, on account of Items deferred	3,387
30. Grange	- -	46,635	46,635			
31. Rowner	318,000	53,979	53,979	315,744		
32. Brockhurst	- -	52,500	52,500			
33. Stokes Bay Line	- -	26,448	26,448			
PLYMOUTH:						
SEA DEFENCES, OUTER LINE:						
34. Bovisand	60,000	58,264	58,264	58,264		
35. Breakwater	155,000	167,062	167,062	167,062		
36. Picklecombe	87,000	80,876	80,876	80,876		
37. Cawsand	13,000	12,914	12,914	12,914		
SEA DEFENCES, INNER LINE:						
38. Mount Edgecumbe	- -	7,804	7,804			
39. Drakes' Island	- -	34,242	35,658	- -	Added for application of Moncrieff system	1,416
40. Western King	47,000	2,887	2,887	48,368		
41. Eastern King	- -	2,019	2,019			
LAND DEFENCES, ANTHONY POSITION:						
42. Tregantle	- -	135,625	135,625			
43. Military Road	260,000	3,767	3,767	260,000		
44. Scraesdon	- -	120,608	120,608			
MAKER AND WHITSAND BAY DEFENCES:						
45. Knatterbury Hill	- -	—	—			
46. Military Road, Polhawn to Tregantle	15,000	5,776	5,776	14,626		
47. Polhawn	- -	8,850	8,850			

RETURN (E.), showing the Comparison between the Estimated Cost of the Works, &c.—*continued.*

NAME OF WORK.	Estimated Cost in Act of 1867.	Cost as Estimated by the Committee on Fortifications.	Sums included in Bill. To Compare with Col. 3.	Sums included in Bill. To Compare with Col. 2.	REMARKS.
1.	2.	3.	4.	5.	6.
PLYMOUTH—*continued.*					
NORTH EASTERN DEFENCES:	£.	£.	£.	£.	
48. Ernsettle	- -	17,630	17,630		
49. Agaton	- -	41,133	41,133		
50. Knowles	- -	19,562	19,562		
51. Woodlands	- -	27,973	27,973		
52. Crownhill	- -	76,409	76,409		
53. Bowden	- -	15,891	15,891		
54. Egg Buckland	- -	14,642	14,642		
55. Forder	- -	16,443	16,443		
56. Austen	518,000	20,607	20,607	530,828	
57. Efford	- -	50,403	50,403		
58. Laira	- -	16,805	16,805		
59. Military Road, &c.	- -	2,665	2,665		
60. Ditto, between Efford and Laira	- -	2,418	2,418		
STADDON DEFENCES:					
61. Stamford	- -	70,359	70,359		
62. Staddon	- -	112,120	112,120		
63. Brownhill, &c.	- -	25,768	25,768		
DEVONPORT DEFENCES:					
64. Devonport Lines	10,000	9,819	9,819	9,819	
PEMBROKE:					
MILFORD HAVEN SEA DEFENCES:					
65. Stack Rock	- -	68,429	68,429		
66. South Hook	- -	38,851	38,851		
67. Hubberstone	225,000	53,443	53,443	218,660	
68. Popton	- -	57,937	57,937		
69. Chapel Bay	- -	13,754	- -	- -	Omitted.
LAND DEFENCES:					
70. Scoveston	50,000	45,462	46,462	46,462	Error in Estimate - - £. 1,000
WORKS AT LANDING PLACES SOUTH OF MILFORD HAVEN:					
71. St. Catherine's	- -	12,660	12,660		
72. Proud Giltar	- -	6,668	- -	- -	Omitted.
73. East Moor	50,000	8,000	- -	12,660	Omitted.
74. Trewent	- -	8,718	- -	- -	Omitted.
75. Freshwater, West	- -	8,000	- -	- -	Omitted.
PORTLAND:					
76. Verne	125,000	136,126	138,196	138,196	Added for application of Moncrieff system - - 2,070
77. East Weir					
BREAKWATER:					
78. Inner Pier Head	- -	2,280	2,280		
79 Breakwater Fort	295,000	273,658	273,658	365,442	
WEYMOUTH:					
80. Nothe	- -	89,504	89,504		

RETURN (E.), showing the Comparison between the Estimated Cost of the Works, &c.—*continued.*

NAME OF WORK.	Estimated Cost in Act of 1867.	Cost as Estimated by the Committee on Fortifications.	Sums included in Bill. To Compare with Col. 3.	Sums included in Bill. To Compare with Col. 2.	REMARKS.	
1.	2.	3.	4.	5.	6.	
THAMES.	£.	£.	£.	£.		£.
81. Coalhouse - - - - -	164,000	211,063	127,698	127,698	Deduct for application of Moncrieff system - - -	83,365
82. Cliffe - - - - - -	121,000	162,937	105,727	105,727	Ditto - ditto - - -	57,210
83. Shornmead - - - - -	118,000	147,705	90,576	90,576	Ditto - ditto - - -	57,129
84. Slough - - - - - -	23,000	22,983	22,983	22,983		
MEDWAY AND SHEERNESS:						
SEA DEFENCES:						
85. Grain Fort - - - - -	- -	114,714	120,600	- -	Add for application of Moncrieff system - - - -	5,886
86. Grain Battery - - - - -	227,000	31,734	35,134	244,963	Ditto - ditto - - -	3,400
87. Garrison Point - - - - -	- -	89,229	89,229			
88. Hoo - - - - - - -	128,000	64,347	64,347	140,036		
89. Darnet - - - - - -		75,689	75,689			
LAND FRONT OF SHEERNESS:						
90. Queenboro' Lines - - -	- -	18,906	18,906			
91. Queenboro' Battery - - -	40,000	30,853	- -	18,906	Omitted.	
92. Cheyney - - - - - -	- -	30,528	- -	- -	Omitted.	
DOVER:						
WESTERN HEIGHTS:						
93. Drop Redoubt - - - - -	- -	13,276	13,276			
94. North Centre Bastion - - -	- -	38,017	38,017			
95. Western Outwork - - - -	- -	62,419	62,419			
96. South Fort Barracks - - -	285,000	48,425	48,425	291,833		
97. Citadel - - - - - - -	- -	34,560	34,560			
CASTLE HEIGHTS:						
98. East Fort Casemate - - -	- -	6,583	6,583			
99. Castle Hill Fort - - - -	- -	88,053	88,053			
CORK:						
HARBOUR:						
100. Spike Island - - - - -	10,000	17,313	15,546	15,546	Add for application of Moncrieff system - - - - -	5,764
					Deduct for portion of battery to be provided for in Annual Estimate - - - -	7,531
101. Carlisle - - - - - -	79,000	87,499	71,805	71,805	Add for application of Moncrieff system - - - -	6,556
					Deduct on account of reduction in amount of work in land line and keep - - - -	22,250
102. Camden - - - - - -	70,000	68,231	70,927	70,927	Add for application of Moncrieff system - - - -	2,696
TOTAL for WORKS - - - £.	5,715,000	6,184,069	5,752,967	5,752,967		
Shields - - - - - - - -	475,000	570,500	340,000	340,000	Deduct for application of Moncrieff system - - -	106,125
					For shields of works, omitted -	2,400
					For shields of inner line of defence, deferred - - -	121,975
						£. 230,500
Incidental Expenses - - - - -	165,000	194,835	190,000	190,000	Reduction - - - - -	4,835
Lands, &c. - - - - - - -	1,115,000	1,102,033	1,102,033	1,102,033		
Contingencies - - - - - -	- -	- -	75,000	75,000		
£.	7,470,000	7,951,437	7,460,000	7,460,000		

FORTIFICATIONS.

STATEMENT showing the SCHEDULE of the FORTIFICATIONS (PROVISIONS FOR EXPENSES) BILL as compared with the SCHEDULE of the REPORT of the COMMITTEE on FORTIFICATIONS (1869), pp. xciv to ciii inclusive, and with the SCHEDULE of the ACT 30 & 31 Vict. c. 145.

(*Mr. Secretary Cardwell.*)

Ordered, by The House of Commons, *to be Printed,*
16 *July* 1869.

330.

Under 1 *oz.*

FORTIFICATIONS.

AN ACCOUNT of EXPENDITURE under the several FORTIFICATION ACTS, with REPORT of the Comptroller and Auditor General thereon.

Treasury Chambers, 6 July 1869.

ACTON S. AYRTON.

REPORT of the Comptroller and Auditor General to the Lords Commissioners of the Treasury.

Exchequer and Audit Department, Somerset House, London, W. C., 24 June 1869.

My Lords,

WITH reference to your Lordships' Minute of the 16th of August 1867 (transmitted to me in Mr. Hunt's letter of the 20th of the same month), in which your Lordships expressed your opinion, that "an account should be rendered of expenditure under the several Fortification Acts for submission, under the provisions of the 33rd section of the Exchequer and Audit Departments Act, to the Comptroller and Auditor General, for Appropriation Audit, in the same manner as that for Voted Army Services;" I have to state, that accounts (copies of which are herewith enclosed) have been transmitted to me by the War Department, showing the amount issued out of the Consolidated Fund for the expenses of fortifications, &c. under the Act 23 & 24 Vict. c. 109, with the net expenditure in the financial years ended the 31st of March 1861, and the 31st of March 1862.

Parl. Paper, No. 568, September 1867.

2.

These accounts have been examined to the same extent as the Army Accounts are examined, under the 29th section of the Exchequer and Audit Departments Act; and it has also been ascertained that none of the services charged therein were provided for in the Army Estimates for the respective years; that the expenditure has been for those fortifications only which were authorised by the Act 23 & 24 Vict. c. 109; and that the expenditure is correctly classed under the heads directed by your Lordships' Minute of the 16th of August 1867.

I have, &c.
(signed) *Wm. Dunbar*,
Comptroller and Auditor General.

The Lords Commissioners of
Her Majesty's Treasury,
&c. &c. &c.

LOAN FOR DEFENCES, 1860–61.

BALANCE SHEET showing the Amount issued out of the Consolidated Fund for the EXPENSES of FORTIFICATIONS, &c. under the Act 23 & 24 Vict. c. 109, with the NET EXPENDITURE for the Financial Year ended 31st March 1861, accompanied by a DETAILED STATEMENT of the same, classified as prescribed by Treasury Minute of 16th August 1867. (General No. 14—1166.)

Dr. *Cr.*

Date.	Description.	Amount.	Date.	Description.	Amount.
1861:		£. s. d.	1861:		£. s. d.
31 March -	To amount issued out of Consolidated Fund under Act 23 & 24 Vict. c. 109, for the Expenses of Fortifications to date.	50,000 - -	31 March -	By expenditure to date - - -	9,458 6 6
			„ „ -	„ balance carried down - - -	40,541 13 6
	TOTAL - - - £.	50,000 - -		TOTAL - - - £.	50,000 - -
1 April - -	To Balance down - - - - £.	40,541 13 6			

War Office, 29 May 1868.

(signed) *W. Brown,*
Accountant General, War Office.

STATEMENT showing in Detail the NET EXPENDITURE for the Financial Year 1860–61, classified as prescribed by Treasury Minute of 16th August 1867. (General No. 14—1166.)

Station.	District.	Service.	Estimated Cost per Act 30 & 31 Vict. c. 145.	Expenditure to 31 March 1861.	—
		WORKS.	£. s. d.	£. s. d.	
Portsmouth - -	Spithead and Sea Defences. Outer Line.	Horse Sand Fort - - - -	365,000 - -	1,979 17 5	
		No Man's Land - - - - -	406,000 - -		
		Other Spithead Work - - - -	293,000 - -		
		Puckpool and St. Helen's Batteries -	145,000 - -		
	Inner Line - - -	Gilkicker Battery - - - -	58,000 - -	—	
		Southsea Castle - - - - -	60,000 - -	—	
		Eastney Batteries - - - -			
		Lumps Battery - - - - -			
	Defences of the Needles Passage.	Hurst Castle - - - - -	110,000 - -	2 18 6	
		Needles Battery - - - -	90,000 - -	—	
		Hatherwood Battery - - - -			
		Warden Point Battery - - -			
		Cliff End Battery - - - -			
		Golden Hill - - - - -			
	Isle of Wight Coast Defences	Sandown Bay Defences - - -	145,000 - -	—	
		Military Road, South West Coast.	—	—	
	Land Defences. Outer Line	Fort Purbrook and Outworks - -	550,000 - -	40 18 7	
		Fort Widley - - - - -			
		Fort Southwick - - - - -			
		Fort Nelson - - - - -			
		Fort Wallington - - - -			
		Fort Fareham - - - - -			
	Inner Line - - -	Hilsea Lines - - - - -	318,000 - -	—	
		Fort Grange - - - - -			
		Fort Rowner - - - - -			
		Fort Brockhurst - - - -			
		Stokes Bay Lines - - - -			
Plymouth - -	Harbour Defences. Outer Line.	Staddon Point Battery - - -	60,000 - -	—	
		Breakwater Battery - - - -	155,000 - -		
		Picklecombe Battery - - - -	87,000 - -		
		Cawsand Bay Battery - - - -	13,000 - -		
	Inner Line - - -	Mount Edgecombe Battery - -	47,000 - -	289 5 -	
		Drake's Island Battery - - -			
		Western King Battery - - -			
		Eastern King Battery - - -			
	Land Defences, Antony -	Fort Tregantle - - - - -	260,000 - -	—	
		Fort Scrœsdon - - - - -			

LOAN FOR DEFENCES, 1860–61—*continued.*

Station.	District.	Service.	Estimated Cost per Act 30 & 31 Vict. c. 145.	Expenditure to 31 March 1861.	—
		WORKS—*continued.*	£. s. d.		
Plymouth—*continued.*	Maker	Knatterbury Whitesand Bay	15,000 – –	—	
	North Eastern Staddon	North Eastern Defences Staddon Fort Fort Stamford	518,000 – –	—	
	Devonport	Devonport Lines	10,000 – –	—	
Pembroke	Milford Haven Sea Defences.	Stack Rock Fort South Hook Battery Hubberstone Battery Popton Point Battery Chapel Bay Battery	225,000 – –	—	
	Land Defences	Fort Scoveston, North of Milford Haven Works to the South of Milford Haven	50,000 – – 50,000 – –	— —	
Portland	Portland	Vern Citadel, and batteries connected therewith. Nothe Fort Breakwater Batteries	125,000 – – 295,000 – –	— —	
Gravesend	Thames	Coal House Fort Cliffe Fort Shornmead Fort Slough Battery	164,000 – – 121,000 – – 118,000 – – 23,000 – –	92 2 5 80 2 2 67 14 5 —	
Medway and Sheerness	Sea defences	Isle of Grain Garrison Point	227,000 – –	3 10 9	
		Hoo Fort Darnet Fort	128,000 – –	42 3 6	
	Works in front of Mile Town	Cheney Rock Fort Queenborough	40,000 – –	—	
Dover	Dover	Castle Hill Fort Dover Castle Western Heights	285,000 – –	—	
Cork	Cork	Spike Island Carlisle Fort Camden Fort	10,000 – – 79,000 – – 70,000 – –	— — —	
		TOTAL WORKS £.	5,715,000 – –	2,598 12 9	
Sundry	Sundry	Providing and fixing Iron Shields	475,000 – –	—	
		Incidental expenses (works and experiments).	165,000 – –	3,272 7 2	*Vide* detail, p. 4.
		Lands, including cost of surveys, surveyor's charges, and legal and other incidental expenses.	1,115,000 – –	3,587 6 7	*Vide* detail, p. 4.
		TOTAL £.	7,470,000 – –	9,458 6 6	

Incidental Expenses (Works and Experiments).

Station.	Designing and Superintending Staff.			Travelling Expenses.	Experiments.	Miscellaneous.	Total.
	Extra Pay, &c. to Officers and Non-Commissioned Officers not Chargeable to Army Grants.	Pay and Allowances of Officers and Non-Commissioned Officers made Supernumerary.	Pay and Allowances of Civilians.				
	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Portsmouth - - - -	4 10 –	- - -	83 7 –	2 11 3	- -	7 2 11	97 11 2
Plymouth - - - -	—	—	—	—	—	—	—
Pembroke - - - -	- - -	- - -	1 19 –	- -	- -	- -	1 19 –
Portland - - - -	—	—	—	—	—	—	—
Gravesend - - - -	—	—	—	—	—	—	—
Sheerness - - - -	- - -	- - -	22 17 6	– 7 2	- -	- -	23 4 8
Chatham - - - -	- - -	- - -	12 3 –	34 16 5	- -	- -	46 19 5
Dover - - - - -	—	—	—	—	—	—	—
Cork - - - - -	—	—	—	—	—	—	—
Head Quarters (for above) -	- - -	- - -	2,497 9 8	319 3 7	262 9 11	23 9 9	3,102 12 11
Total - - - £.	4 10 –	- - -	2,617 16 2	356 18 5	262 9 11	30 12 8	3,272 7 2

LANDS,

Including Purchase of Land, Cost of Surveys, Surveyor's Charges, Legal and other Incidental Expenses.

Station.	District.	Purchase of Land.	Clearance Works.	Legal and other Professional Charges Incidental to Lands.	Surveys.	Total.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Portsmouth - - -	Portsmouth - - - - - -	—	—	—	—	—
	Isle of Wight - - - - -	25 – –	- -	- -	- -	25 – –
	Gosport Advance - - - -	—	—	—	—	—
	Portsdown - - - - - -	10 – –	- -	- -	- -	10 – –
Plymouth - - -	Devonport - - - - - -	—	—	—	—	—
	North Eastern - - - - -	—	—	—	—	—
	Staddon - - - - - - -	3,120 – –	- -	- -	- -	3,120 – –
Pembroke - - -	Milford Haven - - - - -	—	—	—	—	—
Portland - - - -	Portland - - - - - - -	—	—	—	—	—
Gravesend - - -	Thames - - - - - - -	—	—	—	—	—
Chatham - - -	Eastern Defences - - - -	—	—	—	—	—
	Medway - - - - - - -	—	—	—	—	—
Sheerness - - -	Isle of Grain - - - - -	—	—	—	—	—
	Mile Town - - - - - -	—	—	—	—	—
Dover - - - -	Dover - - - - - - -	—	—	—	—	—
Cork - - - -	Cork - - - - - - - -	—	—	—	—	—
London or Head Quarters -	For all of the above generally - -	- -	- -	243 12 2	188 14 5	432 6 7
	Total - - - £.	3,155 – –	- -	243 12 2	188 14 5	3,587 6 7

LOAN FOR DEFENCES, 1861-62.

BALANCE SHEET showing the Amount Issued out of the Consolidated Fund for the EXPENSES of FORTIFICATIONS, &c., under the Act 23 & 24 Vict. c. 109, with the NET EXPENDITURE for the Financial Year ended 31st March 1862, accompanied by a DETAILED STATEMENT of the same, classified as prescribed by Treasury Minute of 16th August 1867. (General No. 14—1166.)

Dr. *Cr.*

Date.	Description.	Amount.	Date.	Description.	Amount.
		£. s. d.			£. s. d.
1861: 1 April -	To Balance Account— For balance brought forward from 1860-61.	40,541 13 6	1861: 1 April -	By Sundries— For expenditure during the year 1861-62 in the construction of fortifications, purchase of lands, &c.	869,753 - 11
1862: 31 March -	To amount issued out of the Consolidated Fund (under Act 23 & 24 Vict. c. 109) during the year.	970,000 - -	1862: 31 March -	By Balance Account— For amount carried forward to 1862-63.	140,788 12 7
	£.	1,010,541 13 6		£.	1,010,541 13 6
1862: 1 April -	To Balance Account— For balance brought forward from 1861-62.	140,788 12 7			

War Office, S.W., 30 April 1869.

(signed) *W. Brown,*
Accountant General, War Office.

STATEMENT showing in Detail the NET EXPENDITURE for the Financial Year ended 31st March 1862.

Station	District.	Service.	Estimated Cost.	Expenditure, 1860-61.	Expenditure, 1861-62.	Total Payments to 31 March 1862.	—
		WORKS.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	
Portsmouth -	Spithead and Sea Defences, Outer Line.	Horse Sand Fort - - -	365,000 - -	1,979 17 5	12,706 7 7	14,686 5 -	
		No Man's Land - - -	406,000 - -				
		Other Spithead Work - -	293,000 - -				
		Puckpool and St. Helen's Batteries.	145,000 - -	—	—	—	
	Inner Line -	Gilkicker Battery - - -	58,000 - -	—	—	—	
		Southsea Castle - - -	60,000 - -	- -	8,176 13 3	8,176 13 3	
		Eastney Batteries - -					
		Lumps Battery - - -					
	Defences of Needles Passage.	Hurst Castle - - -	110,000 - -	2 18 6	10,656 19 11	10,659 18 5	
		Needles Battery - - -	90,000 - -	- -	4,207 17 5	4,207 17 5	
		Hatherwood Battery - -					
		Warden Point Battery -					
		Cliff End Battery - -					
		Golden Hill Battery - -					
	Isle of Wight Coast Defences.	Sandown Bay Defences -	145,000 - -	- -	7,010 6 8	7,010 6 8	
		Military Road, South-west Coast.					
	Land Defences, Outer Line.	Fort Purbrook and Outworks	550,000 - -	40 18 7	24,713 4 10	24,754 3 5	
		Fort Wedley - - -					
		Fort Southwick - - -					
		Fort Nelson - - -					
		Fort Wallington - - -					
		Fort Fareham - - -					
	Inner Line -	Hilsea Lines - - -	318,000 - -	- -	114,929 18 5	114,929 18 5	
		Fort Grange - - -					
		Fort Rowner - - -					
		Fort Brockhurst - - -					
		Stokes Bay Lines - -					
Plymouth - -	Harbour Defences, Outer Line.	Staddon Point Battery - -	60,000 - -	- -	2,094 8 9	2,094 8 9	
		Breakwater Battery - - -	155,000 - -	- -	367 10 -	367 10 -	
		Picklecombe Battery - -	87,000 - -	- -	11,584 8 11	11,584 8 11	
		Cawsand Bay Battery - -	13,000 - -	- -	5,136 10 4	5,136 10 4	

LOAN FOR DEFENCES, 1861-62—*continued.*

Station.	District.	Service.	Estimated Cost.	Expenditure, 1860-61.	Expenditure, 1861-62.	Total Payments to 31 March 1862.	—
		WORKS—*continued.*	£. s. d.	£. s. d.	£. s. d.	£. s. d.	
Plymouth—*contd.*	Inner Line -	Mount Edgecumbe Battery - Drake's Island Battery - - Western King Battery - - Eastern King Battery - -	47,000 - -	289 5 -	9,226 3 -	9,515 8 -	
	Land Defences, Antony.	Fort Tregantle - - - Fort Scrœsdon - - -	260,000 - -	- -	75,119 6 8	75,119 6 8	
	Maker - -	Knatterbury - - - Whitesand Bay - - -	15,000 - -	- -	2,023 10 8	2,023 10 8	
	North-east Division, Staddon Fort.	North-eastern Defences - Staddon Fort - - - Fort Stamford - - -	518,000 - -	- -	23,977 7 6	23,977 7 6	
	Devonport -	Devonport Lines - - -	10,000 - -	- -	5,384 17 5	5,384 17 5	
Pembroke -	Milford Haven, Sea Defences.	Stack Rock Fort - - - South Hook Battery - - Hubberstone Battery - - Popton Point Battery - - Chapel Bay Battery - -	225,000 - -	- -	34,513 3 1	34,513 3 1	
	Land Defences -	Fort Scoveston (north of Milford Haven).	50,000 - -	- -	5,545 2 6	5,545 2 6	
		Works to southward of Milford Haven.	50,000 - -	—	—	—	
Portland - -	Portland - -	Verne Citadel and Batteries connected therewith.	125,000 - -	- -	27,700 - 2	27,700 - 2	
		Nothe Fort - - - - Breakwater Batteries - -	295,000 - -	- -	35,095 8 10	35,095 8 10	
Gravesend -	Thames - -	Coal House Fort - - -	164,000 - -	92 2 5	18,515 4 5	18,607 6 10	
		Cliffe Fort - - - -	121,000 - -	80 2 2	5,631 9 8	5,711 11 10	
		Shornmead Battery - -	118,000 - -	67 14 5	4,681 - 11	4,748 15 4	
		Slough Battery - - -	23,000 - -	—	—	—	
Medway and Sheerness.	Sea Defences -	Isle of Grain - - - Garrison Point - - -	227,000 - -	3 10 9	13,464 17 11	13,468 8 8	
		Hoo Fort - - - - Darnet Fort - - -	128,000 - -	42 3 6	15,486 7 1	15,528 10 7	
	Works in front of Mile Town.	Cheney Rock - - - Queenborough - - -	40,000 - -	- -	54 5 3	54 5 3	
Dover - -	Dover - -	Castle Hill Fort - - - Dover Castle - - - Western Heights - - -	285,000 - -	- -	53,521 15 4	53,521 15 4	
Cork - -	Cork - -	Spike Island - - - -	10,000 - -	- -	941 10 8	941 10 8	
		Carlisle Fort - - - -	79,000 - -	- -	3,395 7 1	3,395 7 1	
		Camden Fort - - -	70,000 - -	- -	144 16 3	144 16 3	
		TOTAL WORKS - - £.	5,715,000 - -	2,598 12 9	536,006 - 6	538,604 13 3	
Sundry - -	Sundry - -	Providing and fixing iron shields.	475,000 - -	—	—	—	
		Incidental Expenses, Works and Experiments.	165,000 - -	3,272 7 2	19,928 8 5	23,200 15 7	*Vide* detail, p. 7.
		Lands, including cost of Surveys, Surveyor's charges, legal and other incidental expenses.	1,115,000 - -	3,587 6 7	313,818 12 -	317,405 18 7	*Vide* detail, p. 7.
		TOTAL - - - £.	7,470,000 - -	9,458 6 6	869,753 - 11	879,211 7 5	

Incidental Expenses, Works and Experiments.

Detail of Expenditure 1861-62.

Stations.	Designing and Superintending Staff. Extra Pay and Allowances of Officers and Non-Commissioned Officers not Chargeable to Army Grants.	Designing and Superintending Staff. Pay and Allowances of Officers and Non-Commissioned Officers made Supernumerary.	Designing and Superintending Staff. Pay and Allowances of Civilians.	Travelling Expenses.	Experiments.	Miscellaneous Charges.	Total.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Portsmouth	101 1 3	148 – –	2,229 18 9	196 10 5	– –	294 15 11	2,970 6 4
Plymouth	54 13 8	360 3 –	209 3 5	23 2 10	– –	156 14 6	803 17 5
Pembroke	6 15 –	– – –	113 12 6	211 7 6	– –	20 15 11	352 10 11
Portland	– – –	64 11 7	199 9 9	9 18 5	– –	3 14 7	277 14 4
Gravesend	15 8 1	135 – 7	534 15 2	199 1 7	– –	– –	884 5 5
Sheerness	10 10 6	62 5 8	437 19 1	9 3 –	– –	– –	519 18 3
Chatham	10 8 –	3 12 –	434 18 1	*108 11 10	– –	*9 2 –	*566 11 11
Dover	– – –	– – –	138 3 8	20 18 8	– –	64 9 8	223 12 –
Cork	– – –	– – –	269 5 9	9 4 –	– –	– –	278 9 9
Head Quarters	3,333 1 9	534 13 6	8,093 13 4	514 6 6	419 8 6	155 18 6	13,051 2 1
Total 1861-62	3,531 18 3	1,308 6 4	12,660 19 6	1,302 4 9	419 8 6	705 11 1	19,928 8 5
Total 1860-61	4 10 –	– – –	2,617 16 2	356 18 5	262 9 11	30 12 8	3,272 7 2
Total to 31st March 1862 - £.	3,536 8 3	1,308 6 4	15,278 15 8	1,659 3 2	681 18 5	736 3 9	23,200 15 7

* A sum of 80 *l.* has been credited to "Miscellaneous for Rents" which has been deducted from the total charge for "Incidental Expenses."

Loan for Defences 1861-62.

DETAIL of Expenditure for Lands, including Cost of Surveys, Surveyor's Charges, Legal and other Incidental Expenses, for the Financial Year 1861-62.

Stations.	Divisions.	Purchase of Lands.	Clearance Works.	Professional and other Charges.	Surveys.	Total.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Portsmouth	Portsmouth	754 – –	– –	– –	– –	754 – –
	Isle of Wight	35,737 10 4	184 15 9	60 – –	– –	35,982 6 1
	Gosport Advance	39,841 11 4	6,255 – –	830 5 10	– –	46,926 17 2
	Portsdown	102,373 8 3	19,930 – –	1,837 13 –	– –	124,141 1 3
Plymouth	Devonport	210 – –	– –	424 6 5	– –	634 6 5
	North Eastern	4,009 – –	7 – –	– –	– –	4,016 – –
	Staddon	38,749 15 1	– –	470 – 11	– –	39,219 16 –
Pembroke	Milford Haven	1,736 7 9	493 16 6	427 18 5	– –	2,658 2 8
Portland	Portland	– – –	– –	705 10 3	– –	705 10 3
Gravesend	Thames	2,831 1 1	425 – –	60 10 10	– –	3,316 11 11
Sheerness	Isle of Grain	9,069 18 –	266 13 –	356 3 1	– –	9,692 14 1
	Mile Town	2,840 – –	925 – –	74 7 11	– –	3,839 7 11
Chatham	Eastern Defences	23,698 7 11	1,056 5 –	300 18 6	– –	25,055 11 5
	Medway	957 10 9	– –	18 18 10	– –	976 9 7
Dover	Dover	171 7 –	– –	3 13 2	– –	175 – 2
Cork	Cork	– – –	– –	7 16 2	– –	7 16 2
Head Quarters	Head Quarters	– – –	– –	3,362 8 4	– –	3,362 8 4
Sundry Stations	Sundry Divisions	– – –	– –	– –	12,354 12 7	12,354 12 7
	Total 1861-62	262,979 17 6	29,543 10 3	8,940 11 8	12,354 12 7	313,818 12 –
	Total 1860-61	3,155 – –	– –	243 12 2	188 14 5	3,587 6 7
	Total - £.	266,134 17 6	29,543 10 3	9,184 3 10	12,543 7 –	317,405 18 7

FORTIFICATIONS.

ACCOUNTS of EXPENDITURE under the several FORTIFICATION ACTS, with REPORT of the Comptroller and Auditor General thereon.

(*Presented pursuant to Act* 23 & 24 *Vict. c.* 109.)

Ordered, by The House of Commons, *to be Printed,*
8 *July* 1869.

311.

Under 1 *oz.*

ARMY (MANUFACTURING DEPARTMENTS).

RETURN to an Address of the Honourable The House of Commons, dated 18 February 1869;—*for*,

"RETURN of the ANNUAL ACCOUNTS of the several MANUFACTURING ESTABLISHMENTS under the WAR OFFICE for the Year 1867-8 (in continuation of Parliamentary Paper, No. 115, of Session 1867-8)."

War Office,
19 Februray 1869.

EDWARD CARDWELL.

(*Mr. Secretary Cardwell.*)

Ordered, by the House of Commons, *to be Printed,*
22 *February* 1869.

BOMBAY BRANCH
OF THE
Royal Asiatic Society.
CLASS

SCHEDULE of BALANCE SHEETS and SUPPORTING DOCUMENTS for the ARMY MANUFACTURING DEPARTMENTS for the Year 1867–8.

No. 1.—ROYAL CARRIAGE DEPARTMENT, WOOLWICH ARSENAL: PAGE

(A.)—Balance Sheet (No. 1) - - - - - - - - - - - 4
(B.)—Balance Sheet (No. 2) - - - - - - - - - - - 5
(C.)—Production Voucher - - - - - - - - - - - 6
(D.)—Conversion Voucher - - - - - - - - - - - 32
(E.)—Additions to Plant in the Department - - - - - - - - 40
(F.)—Capital Account - - - - - - - - - - - - 41

No. 2.—ROYAL GUN FACTORIES, WOOLWICH ARSENAL:

(A.)—Balance Sheet (No. 1) - - - - - - - - - - - 42
(B.)—Balance Sheet (No. 2) - - - - - - - - - - - 43
(C.)—Statement of Guns Manufactured - - - - - - - - - 44
(D.)—Statement of Fittings Manufactured for various Guns - - - - 45
(E.)—Statement of Miscellaneous Services - - - - - - - - 49
(F.)—Statement of Fittings Manufactured for Smooth-Bore Guns - - - 72
(G.)—Statement of Plant added in the Department - - - - - 76
(H.)—Capital Account - - - - - - - - - - - - 78

No. 3.—ROYAL LABORATORY, WOOLWICH ARSENAL:

(A.)—Balance Sheet (No. 1) - - - - - - - - - - 79
(B.)—Balance Sheet (No. 2) - - - - - - - - - - - 80
(C.)—Statement of Miscellaneous Services - - - - - - - - 81
(D.)—Statement of Manufactures - - - - - - - - - - 82
(E.)—Capital Account - - - - - - - - - - - - 98

No. 4.—ROYAL GAS FACTORY, WOOLWICH ARSENAL:

(A.)—Balance Sheet (No. 1) - - - - - - - - - - - 99
(B.)—Balance Sheet (No. 2) - - - - - - - - - - - 99
(C.)—Capital Account - - - - - - - - - - - - 100

No. 5.—ROYAL SMALL ARMS FACTORY, ENFIELD.

(A.)—Balance Sheet (No. 1) - - - - - - - - - - - 101
(B.)—Balance Sheet (No. 2) - - - - - - - - - - - 102
(C.)—Balance Sheet (No. 3) - - - - - - - - - - - 103
(D.)—Statement of Manufactures - - - - - - - - - - 104
(E.)—Capital Account - - - - - - - - - - - - 105

No. 6.—ROYAL GUNPOWDER FACTORY, WALTHAM ABBEY:

(A.)—Balance Sheet (No. 1) - - - - - - - - - - - 106
(B.)—Balance Sheet (No. 2) - - - - - - - - - - - 107
(C.)—Statement of Manufactures - - - - - - - - - - 108
(D.)—Capital Account - - - - - - - - - - - - 109

No. 7.—ROYAL ORDNANCE FACTORIES, PORTSMOUTH:

(A.)—Balance Sheet (No. 1) - - - - - - - - - - - 110
(B.)—Balance Sheet (No. 2) - - - - - - - - - - - 111
(C.)—Statement of Manufactures - - - - - - - - - - 112
(D.)—Statement of Conversions and Alterations - - - - - - - 122
(E.)—Statement of Repairs - - - - - - - - - - - 124
(F.)—Statement of Miscellaneous Services - - - - - - - - 133
(G.)—Statement of Additions to Plant in the Department - - - - 164
(H.)—Capital Account - - - - - - - - - - - - 165

No. 8.—Royal Laboratory, Bull Point, Devonport: Page

(A.)—Balance Sheet (No. 1) - - - - - - - - - - - 166
(B.)—Balance Sheet (No. 2) - - - - - - - - - - - 167
(C.)—Statement of Manufactures - - - - - - - - - - 168
(D.)—Statement of Miscellaneous Services - - - - - - - - 170
(E.)—Statement of Plant added in the Department - - - - - - 177
(F.)—Capital Account - - - - - - - - - - - - - 178

No. 9.—Workshops, Gun Wharf, Devonport:

(A.)—Balance Sheet (No. 1) - - - - - - - - - - - 179
(B.)—Balance Sheet (No. 2) - - - - - - - - - - - 179
(C.)—Statement of Manufactures - - - - - - - - - - 180
(D.)—Statement of Repairs - - - - - - - - - - - 183
(E.)—Statement of Conversions - - - - - - - - - - 192
(F.)—Statement of Alterations - - - - - - - - - - 194
(G.)—Miscellaneous Services - - - - - - - - - - 195
(H.)—Capital Account - - - - - - - - - - - - 202

No. 10.—Royal Clothing Factory, Pimlico:

(A.)—Balance Sheet - - - - - - - - - - - - - 203
(B.)—Statement of Manufactures - - - - - - - - - - 204
(C.)—Statement of Repairs and Alterations - - - - - - - 228
(D.)—Statement of Garments Issued, Cut Out - - - - - - - 237
(E.)—Statement of Semi-Manufactures in hand on 31st March 1868 - - 242

No. 11.—Royal Clothing Factory, Woolwich:

(A.)—Balance Sheet - - - - - - - - - - - - - 244
(B.)—Statement of Manufactures - - - - - - - - - - 245
(C.)—Statement of Repairs and Alterations - - - - - - - - 255
(D.)—Statement of Garments Issued in Material - - - - - - - 258
(E.)—Statement of Semi-Manufactured Articles received from Storekeeper to make up - - - - - - - - - - - - 260
(F.)—Statement of Garments Issued, Cut Out - - - - - - - - 261
(G.)—Statement of Semi-Manufactures in hand on 31st March 1868 - - 261

No. 12.—Royal Small Arms Factory, Birmingham:

(A.)—Balance Sheet (No. 1) - - - - - - - - - - - 262
(B.)—Balance Sheet (No. 2) - - - - - - - - - - - 263
(C.)—Statement of Miscellaneous Services - - - - - - - - 264
(D.)—Statement of Arms re-stocked - - - - - - - - - - 265
(E.)—Statement of Arms thoroughly repaired - - - - - - - - 266
(F.)—Statement of Arms cleaned and slightly repaired - - - - 267
(G.)—Statement of Arms repaired for Regiments, &c.- - - - - 269
(H.)—Statement of Swords repaired - - - - - - - - - 269
(I.)—Statement of Scabbards repaired - - - - - - - - - 270
(J.)—Statement of Materials fitted to Arms - - - - - - - - 271
(K.)—Statement of Miscellaneous Articles repaired - - - - - - 272
(L.)—Capital Account - - - - - - - - - - - - - 274

Mem.—The Secretary of State for War having decided upon showing the effect of debiting the Manufacturing Establishments with Depreciation on Buildings, Machinery, &c., and Interest on Invested and Working Capital, those Items have been included in the Balance Sheets marked No. 2, the Balance Sheets No. 1 showing, as hitherto, the Cost of Productions, &c., based upon Actual Expenditure, plus the Stock of Stores and Semi-Manufactures, at the Commencement of each Year.

War Office,
February 1869.

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

— No. 1. —

ROYAL CARRIAGE DEPARTMENT, WOOLWICH ARSENAL.

(A.)—BALANCE SHEET, No. 1, of the Royal Carriage Department, Royal Arsenal, Woolwich, 1867–8.

Dr.

	£.	s.	d.	£.	s.	d.
To Balance:						
For Stores in Stock on 1st April 1867	317,578	16	5¾			
For Work in hand on 1st April 1867	49,499	1	5¼	367,077	17	11
To Army Supplies, 1867–8:						
For Cash advanced through the Paymaster General, and expended on the following Services during the Year:						
Salaries	5,860	17	8			
Wages	138,436	2	1			
Wages of Men invalided on Medical Certificate	2,655	5	3			
Stores, Materials, &c.	54,149	17	10			
Gas	1,446	11	3			
Repairs to Gas Fittings	572	15	8			
Water	187	10	–			
Police	1,417	3	–			
Military Horses, Carts, Drivers, &c.	678	16	8			
Divine Service	89	19	6			
Medical Department	487	6	6			
Chemical Department	100	–	–			
Works Department	479	–	–			
Library	16	12	9¾			
Schools	12	14	–			
Miscellaneous Services	475	4	8			
Military Pay of Officers	770	2	6			
Repairs to Buildings	2,595	14	–			
Repairs to Machinery	667	–	–			
New Buildings	8,467	8	11½			
New Machinery	4,358	11	4			
Superannuations	2,919	6	3			
Gratuities	85	19	7	226,929	19	6¼
To Miscellaneous Services, 1867–8:						
For Expenditure not defrayed out of Army Supplies:						
Stationery	503	6	6			
Rates	400	–	–			
Rental of Quarters	200	–	–	1,103	6	6
To Sundry Departments, 1867–8:						
For Stores received from various Sources	3,602	13	6¼			
For Machinery	107	10	–			
For Work performed by other Departments	208	10	2	3,918	13	8¼
			£.	599,029	17	7½

Cr.

	£.	s.	d.	£.	s.	d.
By Balance:						
For Stores in Stock on 31st March 1868	262,561	11	3½			
For Work in hand on 31st March 1868	51,841	1	–	314,402	12	3½
By Capital Account:						
For New Buildings added during the Year	8,467	8	11½			
For New Machinery added during the Year	4,467	1	4	12,933	10	3½
By Production Account:						
For General Service Repairs performed during the Year	14,292	18	–			
For Work performed in the Drawing Office during the Year	1,357	18	4			
For Articles made new during the Year, as per Statement (C.)	178,848	7	6			
For Articles converted during the Year, as per Statement (D.)	52,629	9	11			
For Additions to the Plamt in the Department during the Year, as per Statement (E.)	1,582	1	11			
For Miscellaneous Services	394	19	4	249,105	15	–
By Sundry Departments:						
For Serviceable Stores issued during the Year	19,825	6	2			
For Obsolete and Unserviceable Stores issued during the Year	2,762	13	10½	22,588	–	–
			£.	599,029	17	7½

H. W. S. Whiffin
Chief Auditor of Army Accounts.

H. Clerk, Colonel, R.A.,
Superintendent.

No. 1.—Royal Carriage Department, Woolwich Arsenal—*continued.*

(B.)—BALANCE SHEET, No. 2, of the Royal Carriage Department, Royal Arsenal, Woolwich, 1867-8.

Dr.

	£. s. d.	£. s. d.
To Balance:		
For Stores in Stock on 1st April 1867	317,578 16 5¾	
For Work in hand on 1st April 1867 -	49,499 1 5¼	367,077 17 11
o Army Supplies, 1867-8:		
For Cash advanced through the Paymaster General, and expended on the following Services during the Year:		
Salaries - - - - -	5,860 17 8	
Wages - - - - -	138,436 2 1	
Wages of Men invalided on Medical Certificate - - - -	2,655 5 3	
Stores, Materials, &c. - - -	54,149 17 10	
Gas - - - - - -	1,446 11 3	
Repairs to Gas Fittings - -	572 15 8	
Water - - - - -	187 10 –	
Police - - - - -	1,417 3 –	
Military Horses, Carts, Drivers, &c. - - - - -	678 16 8	
Divine Service - - - -	89 19 6	
Medical Department - - -	487 6 6	
Chemical Department - - -	100 – –	
Works Department - - -	479 – –	
Library - - - - -	16 12 9¾	
Schools - - - - -	12 14 –	
Miscellaneous Services - -	475 4 8	
Military Pay of Officers - -	770 2 6	
Repairs to Buildings - - -	2,595 14 –	
Repairs to Machinery - -	667 – –	
New Buildings - - - -	8,467 8 11½	
New Machinery - - - -	4,358 11 4	
Superannuations - - -	2,919 6 3	
Gratuities - - - - -	85 19 7	226,929 19 6½
To One Year's Interest, at 3½ per Cent., on Invested Capital, viz.:		
£. s. d.		
Land - - - 5,602 3 9		
Buildings - - 80,124 3 3¼		
Machinery - - 54,738 13 5¼		
Stores in Stock and Work in hand 1st April 1867 - - 367,077 17 11		
£. 507,542 18 4½	17,764 – –½	
To One Year's Interest, at 3½ per Cent., on Working Capital, viz., One-fifth of Annual Expenditure - - - -	1,623 13 5½	
To One Year's Depreciation, at 5 per Cent. on Buildings, and 10 per Cent. on Machinery, as per Capital Account -	9,480 1 6	28,867 15 –
To Miscellaneous Services, 1867-8:		
For Expenditure not defrayed out of Army Supplies:		
Stationery - - - - -	503 6 6	
Rates - - - - -	400 – –	
Rental of Quarters - - -	200 – –	1,103 6 6
To Sundry Departments, 1867-8:		
For Stores received from various Sources - - - - -	3,602 13 6¼	
For Machinery - - - -	107 10 –	
For Work performed by other Departments - - - - -	208 10 2	3,918 13 8¼
	£.	627,897 12 7½

Cr.

	£. s. d.	£. s. d.
By Balance:		
For Stores on Stock on 31st March 1868 - - - -	262,561 11 3½	
For Work in hand on 31st March 1868 - - - - -	51,841 1 –	314,402 12 3½
By Capital Account:		
For New Buildings added during the Year - - - -	8,467 8 11½	
For New Machinery added during the Year - - - -	4,466 1 4	12,933 10 3½
By Production Account:		
For General Service Repairs performed during the Year - -	15,832 3 3¼	
For Work performed in the Drawing Office during the Year -	1,503 17 6¾	
For Articles made new during the Year, as per Statement (C.) -	198,072 2 1½	
For Articles converted during the Year, as per Statement (D.) -	58,286 8 9½	
For Additions to the Plant in the Department during the Year, as per Statement (E.) - -	1,752 3 –	
For Miscellaneous Services -	395 16 3½	275,842 11 –½
By Sundry Departments:		
For Serviceable Stores issued during the Year - - - -	21,956 5 1½	
For Obsolete and Unserviceable Stores issued during the Year -	2,762 13 10½	24,718 19 –
	£.	627,897 12 7½

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

H. Clerk, Colonel, R. A.,
Superintendent.

No. 1.—Royal Carriage Department, Woolwich Arsenal—*continued.*

(C.)—RETURN of Stores made "New" in the Royal Carriage Department between the 1st April 1867 and 31st March 1868, and delivered to the Principal Superintendent of Stores.

DESCRIPTION.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Aprons, canvas, store cart (set)	1	– 6 3½	– 15 2	– 6 3¼	1 7 8¾	1 10 8½
„ leather, bread wagon	2	– 13 –	2 7 –½	– 17 1¾	3 17 2¼	4 5 5¾
Arcs, elevating, land service, 12 or 13-inch	5	7 10 8½	3 – 7½	3 – 4½	13 11 8½	15 – 11
„ „ 7 or 9-inch	14	10 13 2¼	7 12 6¼	5 4 5¾	23 10 2¼	26 – 8¾
„ sea service, 9-inch	7	6 11 11	5 17 8¼	3 11 3¾	16 – 11	17 15 5
„ „ 8 or 7-inch	63	61 7 9¾	39 7 7½	28 15 10¼	129 11 3½	143 9 9¾
„ „ 7-inch, attached to band	3	3 3 5	2 2 3	1 10 2¼	6 15 10¼	7 10 5½
Arms, iron, wheel, 7-pr. M.L. rifled (Abyssinia)	10	4 19 10¾	– 16 3	1 13 2	7 9 3¾	8 5 4½
Axletrees, wrought iron:						
With linch pins and washers, transporting platform, with wheels, 13 or 12-inch	3	16 7 4¾	33 14 7¾	14 6 3½	64 8 4	71 6 9¾
With linch pins and washers, transporting platform, with wheels, 7 or 9-inch	10	50 17 3¾	114 17 4¾	47 7 1	213 1 9½	235 19 10½
With linch pins and washers, transporting platform, without wheels, 13 or 12-inch	2	2 8 10	4 18 2	2 2 –	9 9 –	10 9 3¾
With linch pins and washers, transporting platform, without wheels, 7 or 9-inch	29	40 1 8	37 17 3	22 5 5	100 4 4	110 19 9
With linch pins and washers, transporting slide, S. S., 9-inch 12-ton, and 8-inch 9-ton, also 150-pr. square	13	17 15 4	16 15 7	9 17 4¾	44 8 3¾	49 3 9½
With linch pins and washers, transporting slide, S. S., 7-inch 6½-ton, and 100-pr. square	52	39 8 –¼	40 8 5¼	22 16 1¾	102 12 7¼	113 13 2½
With linch pins and washers, travelling field, or 2nd class arms, heavy	9	7 10 1½	8 10 5	4 11 7	20 12 1½	22 16 5¼
Travelling, with linch pins and washers, G. S., or 3rd class arm carriage, 7-pr. mountain	2	– 14 9	– 10 –	– 7 –¾	1 11 9¾	1 15 2¾
Travelling, with linch pins and washers, G. S., or 3rd class arm wagon	10	6 9 3	4 1 4	3 – 2	13 10 9	14 19 10¼
Travelling, with linch pins and washers, siege or 1st class arm carriage, gun and howitzer, and 13-inch mortar	6	9 19 6¾	5 15 6	4 10 –½	20 5 1¼	22 8 7¾
Axletrees, steel, 7-pr. M. L. R. (Abyssinia)	1	– 10 7	– 10 3¼	– 5 11½	1 6 9¾	1 9 8¾
„ wood, naval, fore, 64-pr. M. L.	88	7 3 8½	54 – 4¾	17 9 9	78 13 10¼	87 3 –½
„ „ „ 8-inch	200	13 18 –¾	104 9 9	33 16 6½	152 4 4¼	168 11 6¾
„ „ „ 40 and 32-pr., common	20	1 6 3	9 17 5½	3 3 11	14 7 7½	15 18 6½

17. " " 6-pr. bronze, common, 6 cwt. 6-pr., R., top and under, and 6-pr., elevating bottom carriage	10	– 5 1½	1 18 5	– 12 5½	2 16 –	3 2 –¼
" " 20, 12, and 9-pr., Armstrong, 24 and 12-pr., heavy and light, howitzer under carriage	23	– 17 7¾	6 17 –¾	2 4 2½	9 18 11	11 – 3¼
" " hind, 64-pr. M. L.	144	11 15 –½	88 6 10¾	28 12 –	128 13 11¼	142 10 7¼
" " " 8-inch or 42-pr., or 40-pr. R.	243	20 10 11	154 8 1¾	49 19 9¼	224 18 10	249 2 4¾
" " " 32-pr.	52	4 6 11¼	32 13 4¾	10 11 6½	47 11 10½	52 14 2¼
Bales, brass	100	31 7 –	13 – 6	12 13 6¾	57 1 –¾	63 3 8½
Bands, iron, elevating, 7-inch 6½-ton	1	1 9 1¼	– 10 8½	– 11 5	2 11 2¾	2 16 8¾
" " slinging, guns, 13-inch 23-ton	1	10 1 11¾	3 8 9¼	3 17 4¼	17 8 1¼	19 5 6¼
" " " 9-inch 12-ton	1	3 14 8	1 8 5½	1 9 5½	6 12 7	7 6 10
" leather, intrenching, tools	2	– 1 2	– 3 3	– 1 3¼	– 5 8¼	– 6 4¾
Barrows, charge, with covers	3	4 14 7¼	4 15 5	2 14 3½	12 4 3¾	13 10 6¾
" coal, common	3	4 10 1½	3 4 9	2 4 3	9 19 1½	11 – 6¼
" hand, single	2	– 10 11¼	– 2 5½	– 3 10	– 17 2¾	– 19 –¾
" magazine, double	4	9 5 4¾	18 12 6¾	7 19 5	35 17 4½	39 14 5¾
" " single	8	6 4 6½	12 5 6¼	5 5 8¾	23 15 9½	26 6 11¼
" powder, covered, two wheel, without wheels	17	61 4 –½	27 16 9¾	25 8 10	114 9 8¼	126 15 9½
" truck, or sack	15	19 15 4¼	9 7 6	8 6 6½	37 9 4¾	41 9 11¼
" " transporting shot or shell	31	36 13 3¼	34 4 11¾	20 5 2¾	91 3 5¾	100 19 5½
" wheel, intrenching	1	– 15 –¼	– 11 6½	– 7 7	1 14 1¾	1 17 9¾
" " to pattern	6	14 2 6¼	6 8 8	5 17 5¾	26 8 8	29 5 5¾
" " long, open	6	6 7 7¾	2 18 4¼	2 13 1¾	11 19 1¾	13 4 10¼
Bars, crab, capstan	30	5 4 5¾	5 17 1	3 3 3¾	14 4 10½	15 15 6
" splinter, cart, engineer, hospital, and 6-pr. limber, special	1	1 10 7¼	– 6 5½	– 10 7	2 7 7¾	2 12 9¼
" " " mortar shell	1	2 15 4½	– 17 2	1 – 8¾	4 13 3¼	5 3 3½
" " limber, artillery, field, block, trail	10	1 13 8	1 14 4½	– 19 5¼	4 7 5¾	4 16 10½
" " " " " siege	1	3 5 9	– 18 9¾	1 4 2	5 8 8¾	6 – 5
" " wagons, G. service	1	1 – 6	– 7 1¾	– 7 10¾	1 15 6½	1 19 4¼
" " " pontoon	1	1 9 6¼	– 7 –¼	– 10 5¼	2 6 11¾	2 12 –½
" " " sling	1	1 16 10¾	1 11 11¾	– 19 8¼	4 8 6¾	4 18 –¾
Bearers, gun, brass	22	2 3 8¾	1 13 3	1 2 –	4 18 11¾	5 9 7¼
" " iron, 7-pr. M. L. (Abyssinia)	1	– 1 6¼	– – 6	– – 7	– 2 7¼	– 2 10¾
Beaters, turf	6	– 9 10½	– 14 6¼	– 6 11¾	1 11 4½	1 14 9
Beds, iron, naval, 68-pr.	5	6 4 4½	1 16 –¼	2 5 10	10 6 2¾	11 8 4¾
" wood, land service, carriage, travelling, in the rough axletree, siege	1	– 10 4½	– 9 11	– 5 9½	1 6 1	1 8 10½
" " naval carriage, 40-pr., common, R.	2	– 16 11¾	1 7 10	– 12 9¾	2 17 7½	3 3 10
" " " depressing 64-pr., B. L. and M. L.	6	– 11 5	– 13 2	– 7 –¼	1 11 7¼	1 15 –
" " " 20-pr. B. L.	6	2 1 –	2 10 –	1 6 –	5 17 –	6 9 7
" " " R. Chock, S. B. gun, 32-pr. 25 cwt.	2	– 19 4¼	1 2 1¼	– 11 10	2 13 3½	2 19 –¼
" " " common, 12-pr.	1	– 10 2	– 10 8½	– 5 11½	1 6 10	1 9 8½
" " " sliding, rifled, M. L., 7-inch gun, iron	68	9 2 4¾	4 19 –½	4 – 5	18 1 10¼	20 – 9¼
" " " " " 8-inch "	19	2 13 6½	1 15 6¾	1 5 5½	5 14 6¾	6 6 10½
" " " " " 9-inch "	7	1 – 11¾	1 1 3½	– 12 1	2 14 4¼	3 – 2¼
" " " " S. B., 68-pr.	5	– 2 6	– 5 11½	– 2 5	– 10 10½	– 12 –½

No. 1.—Royal Carriage Department, Woolwich Arsenal—(C.) Return of Stores made New, &c.—*continued.*

DESCRIPTION.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Beds, wood, wagon in the rough, forage	43	3 11 6	8 10 6¾	3 9 2	15 11 2¾	17 4 8¼
" " naval carriage, sliding S. B. 8-inch, 65 or 60 cwt.	40	19 1 11½	25 11 6¼	12 15 3¼	57 8 8¾	63 12 2¼
" " mortar, L. S. 4⅖-inch elm	5	5 19 10¼	2 5 7¼	2 7 3¼	10 12 8¾	11 15 7¼
Benches, hard wood	1	– 13 1½	– 9 6	– 6 5½	1 9 1	1 12 2½
Bits, saddlery, bridoon, without T.	14	3 7 7¼	– 8 11	1 1 10¼	4 18 4½	5 8 11½
Blocks, iron, with metal sheaves, 7-inch, for rear of slides	40	27 14 –½	19 2 9¼	13 7 8¼	60 4 6	66 13 11¾
" wood, anvil, forge cart or wagon	9	1 – 6	1 10 –	– 14 5¼	3 4 11¼	3 11 11½
" " Bothway's, with hooks, double, 18-inch	30	90 14 10½	103 16 11½	55 12 –	250 3 10	277 1 8¼
" " " " 15-inch	2	4 18 4¼	4 16 –¼	2 15 6½	12 9 11	13 16 9¼
" " " " 12-inch	29	37 13 10	30 1 1¾	19 7 1¾	87 2 1½	96 9 4½
" " " " 10-inch	17	20 2 4½	13 19 5	9 14 9¾	43 16 7¼	48 10 10
" " " " 8-inch	12	7 19 9	5 8 11¾	3 16 9⅓	17 5 6¼	19 2 8
" " " " 7-inch	14	6 15 10	4 15 9½	3 6 2¼	14 17 9¾	16 9 10
" " " " 6-inch	11	5 7 11½	2 13 3¼	2 6 –¾	10 7 3½	11 9 6¾
" " " " 5-inch	1	– 13 3	– 5 –⅙	– 5 2¾	1 3 6¼	1 6 –½
" " " " 3-inch	3	1 1 10¼	– 3 5¾	– 7 3	1 12 7	1 16 1
" " " single, 18-inch	32	77 17 10½	67 3 5½	41 8 11¾	186 10 3¾	206 11 3¼
" " " " 15-inch	22	50 10 2¾	34 12 11¾	24 6 7¾	109 9 10¼	121 5 2¾
" " " " 12-inch	38	41 3 1¼	24 11 5¾	18 15 7½	84 10 2½	93 11 10½
" " " " 10-inch	7	6 6 2	3 1 3	2 13 6½	12 – 11½	13 6 10¼
" " " " 6-inch	20	10 7 4	3 3 5¾	3 17 4½	17 8 2¼	19 5 7½
" " " " 5-inch	1	– 7 8	– 2 6	– 2 10¾	– 13 –¾	– 14 5½
" " " " 3-inch	23	7 3 3¾	1 6 –	2 8 4½	10 17 8¼	12 1 1
" " " treble, 18-inch	22	73 11 1¼	104 5 5½	50 16 2½	228 12 9¼	253 4 3
" " " " 15-inch	7	22 12 4¼	23 19 6½	13 6 3¼	59 18 2	66 6 11⅓
" " " " 12-inch	61	92 1 –	82 10 11½	49 17 8¾	224 9 8¼	248 12 3¼
" " " " 10-inch	13	17 1 6⅓	12 12 6⅓	8 9 9	38 3 10	42 5 11¼
" " " " 8-inch	6	4 6 5	3 3 7¾	2 2 10½	9 12 11¼	10 13 8
" " " " 6-inch	1	– 12 11½	– 5 9	– 5 4¼	1 4 –¾	1 6 7¾
" " cartridge, sets	1	– 9 6¾	1 17 8¾	– 13 6¼	3 – 9¾	3 7 4¼
" " " 9-inch	1	– 7 2¼	– 14 1¼	– 6 1	1 7 4½	1 10 3¾
" " " 8-inch	1	– 6 4	– 9 7	– 4 6½	1 – 5½	1 2 8
" " chopping, O. P.	24	11 14 7	15 10 11¼	7 15 10½	35 1 4¾	38 16 9⅓
" " " N. P.	217	129 2 6½	122 16 10¾	71 19 10¾	323 19 4	358 15 9¼
" " cradle for shot, sorts	83	3 9 2¾	5 12 6	2 11 11	11 13 7¾	12 18 9

Blocks, wood, metal bound, with swivel hooks, 7-inch, double	4	3 8 2¾	2 2 –	1 11 6	7 1 8¾	7 16 11½
" " " " 7-inch, single	4	2 15 4¾	2 2 6	1 7 11¾	6 5 10½	6 19 4¾
" " model, for shears, set	1	11 10 5	– 4 1¼	3 7 –	15 1 6¼	16 13 11
" " oakum	1	– 16 6¼	1 2 3¾	– 11 1¼	2 9 11¼	2 15 3¾
" " snatch, 18-inch	2	3 6 –¼	3 11 –½	1 19 2	8 16 2¾	9 15 2
" " spare wheel, 9 or 12-pr.	8	2 7 11½	4 8 11	1 19 1¼	8 15 11½	9 14 10½
" " straining, universal saddle seats (red wood)	1	1 17 9	1 – 6½	– 16 8	3 14 11½	4 3 –¼
Boards, centre intrenching tool, 7-pr. M. L. R. (Abyssinia)	1	– 4 9	– 5 10½	– 3 –½	– 13 8	– 15 1¾
" foot, 12-pr. ammunition wagon body	10	– 2 –¾	– 8 7½	– 3 –¾	– 13 9	– 15 2¼
" " " " limber	13	– 6 6	– 19 1¾	– 7 3¾	1 12 11½	1 16 6
" notice	4	– 10 10	– 4 3¼	– 4 3¾	– 19 5	1 1 6¼
" penetration	200	– 16 11½	2 – 5¾	– 16 5	3 13 10¼	4 1 9½
" platform, ash	1	– – 5¼	– 1 10¾	– – 8	– 3 –	– 3 4
" " teak	1	– – 7	– 6 4¾	– 2 –	– 8 11¾	– 9 11¼
" scale, for shot, 48-inch square, with chains	4	12 – 9	8 13 5¼	5 18 4	26 12 6¼	29 9 9¼
Bolts, iron, bars, splinter	12	– 7 2	– 8 10	– 4 6¾	1 – 6¾	1 2 9¼
" naval gun, fighting boat carriage, 9 or 12-pr.	51	10 17 1¼	4 – 5	4 5 –	19 2 6¼	21 3 7¾
" " " 20-pr.	2	– 6 11¼	– 1 11¾	– 2 6½	– 11 5½	– 12 8¼
" strengthening, intrenching barrow	853	10 8 5	6 2 3¼	4 14 5¾	21 5 2	23 10 10¼
" with nuts of sorts	11	– 3 11¾	– 1 5	– 1 6½	– 6 11¼	– 7 8¼
Bottoms, tent hospital marquees (4 to a set)	202	196 4 4½	1,076 14 9½	363 14 2	1,636 13 4	1,812 11 8½
Bouches, metal breeching	118	5 17 4	39 15 11¾	13 – 11¼	58 14 2½	65 – 5¼
Boxes, copper, for cartridges, 7-pr. M. L. R. (Abyssinia)	26	1 8 7	1 11 1¼	– 17 –½	3 16 8¾	4 4 11¾
" leather tube, large	4	– 9 –	– 8 11½	– 5 1½	1 3 1	1 5 6¾
" pipe, gun metal, 7-pr. M. L. R. (Abyssinia)	6	– 3 6½	– 10 –¾	– 3 10½	– 17 5¾	– 19 4¼
" tin, dubbing, 28 lbs.	135	14 13 7	11 10 1½	7 9 7½	33 13 4	37 5 8½
" " holdall, 7-pr. brass gun	24	1 2 10	– 11 5¼	– 9 9½	2 4 –¾	2 8 9½
" " travelling carriage, fuze, 9, 12, or 20-pr.	5	– 12 11½	– 3 7¾	– 4 8¾	1 1 4	1 3 7½
" " tube	10	– 7 7¼	– 4 6½	– 3 9¾	– 15 11½	– 17 8¼
" ammunition, wood, 40-pr. limber, near and off	2	2 19 11	2 15 10	1 13 –¾	7 8 9¾	8 4 9¾
" " naval, 20-pr., near and off	6	5 6 5½	9 3 11½	4 2 11¼	18 13 4¼	20 13 5¾
" " " 12-pr., near and off	21	21 18 6¾	32 19 –	15 13 7¼	70 11 2	78 2 10¼
" " mountain service, 7-pr., India	3	2 6 11¼	2 9 8¾	1 7 7½	6 4 3½	6 17 7¾
" wood, ammunition, S. A., limber of wagon	21	39 2 4¾	29 14 10¾	19 13 6½	88 10 10	98 1 2
" " " S. arm, teak	46,886	2,383 19 2¼	5,939 12 2¼	2,378 5 4½	10,701 16 9	11,852 2 9
" " medical appliance, long	15	11 3 6¾	8 1 4½	5 9 11½	24 14 10¾	27 8 1
" " " " short	15	5 9 7½	4 16 7¼	2 18 11	13 5 1¾	14 13 7¾
" " " comfort, regimental, or battalion No. 1	26	26 15 –	18 1 9	12 16 2¾	57 12 11¾	63 16 11
" " " " " " No. 2	10	14 16 10	10 6 1½	7 3 8½	32 6 8	35 16 2
" " " " divisional, No. 1	13	13 12 –¾	7 11 7	6 1 –½	27 4 8¼	30 3 2¾
" " " " " No. 2	5	6 6 9¾	4 10 1½	3 1 11¾	13 18 11	15 8 10¾
" " " " without interior fittings	2	1 7 7¼	1 – 8¼	– 13 9½	3 2 1	3 8 9

No. 1.—Royal Carriage Department, Woolwich Arsenal—(C.) Return of Stores made New, &c.—*continued.*

DESCRIPTION.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Boxes, wood, record and books	8	20 17 9½	14 5 6	10 – 11¼	45 4 2¾	50 1 5
" " tools	15	8 16 5¼	10 – 6½	5 7 8¼	24 4 8	26 16 9½
" " on 4 wheels filled with bran	1	15 13 11¾	13 – –¾	8 4 –½	36 18 1	40 17 5
" " ammunition, large and double shell, 7-pr. M. L. R. (Abyssinia)	25	27 1 –¼	25 11 2¾	15 – 7¾	67 12 10¾	74 18 3¾
" " " small, 7 pr., M. L. R. (Abyssinia)	37	25 13 11¼	12 14 5¾	10 19 6½	49 7 11½	54 14 1¾
" " 7-pr. M. L. R., miscellaneous (Abyssinia)	6	5 2 5	4 17 7½	2 17 1	12 17 1½	14 4 9¼
" " " projectiles (Abyssinia)	148	134 15 7¾	88 14 10	63 17 4	287 7 9¾	318 5 7½
" " " small stores, gun (Abyssinia)	25	10 15 8¾	5 10 6½	4 13 2½	20 19 5¾	23 4 6½
" " " small stores, rocket (Abyssinia)	5	1 18 4¼	1 – 2	– 16 8½	3 15 2¾	4 3 3¾
" " 6-pr. L. S. limber, or wagon, rocket (Hales')	1	3 5 2¾	1 12 5½	1 8 1¼	6 5 9½	6 19 3¾
" " shell and shot, R. No. 6, elm and fir	1	– 1 1¼	– – 9¾	– – 6½	– 2 5½	– 2 8¾
" " " rifled, No. 7, elm and fir	1	– 1 1½	– – 10	– – 6¾	– 2 6¼	– 2 9½
" " " No. 9 "	300	13 11 5	35 15 7	14 2 1	63 9 1	70 5 5¾
" " " " Reeves' case shot, elm and fir	1,450	89 6 7¼	113 1 6¼	57 16 8	260 4 9½	288 4 2¾
" " " " 64-pr. common, elm	1	– 5 6¾	– 1 10	– 2 1¼	– 9 6	– 10 6¼
" " " " 64-pr. shrapnell, elm	1	– 2 7½	– 1 7	– 1 2⅓	– 5 5	– 6 –
" " " " 7-inch common, elm	1	– 5 3½	– 2 2¼	– 2 1¼	– 9 7	– 10 7¼
" " " " 7-inch shrapnell, elm	1	– 3 –	– 2 4	– 1 6¼	– 6 10¼	– 7 7
" " " " 7-inch double, elm	22	2 9 8½	3 1 10¼	1 11 10⅓	7 3 5¼	7 18 10¼
" " " " 8-inch common, elm	2	– 12 5	– 5 6	– 5 1½	1 3 –½	1 5 6¼
" " " " 9-inch common, elm	2	– 13 2¾	– 7 2¾	– 5 10	1 6 3½	1 9 1½
" " " " 7-pr. M. L. R., case shot, elm	1	– 2 3½	– 1 10¼	– 1 2¼	– 5 4	– 5 11
Braces, pontoon, 15 ft. by 1½ in.	32	– 3 5¾	1 7 4	– 8 9⅓	1 19 7¼	2 3 10¼
Brackets, iron, handspikes, for carriages, wood	52	7 15 8	2 18 7½	3 1 2¾	13 15 6¼	15 5 1¾
" " " " wrought iron, 9 or 8-inch	3	2 4 9	– 15 5½	– 17 2½	3 17 5	4 5 9¼
" " " " 7-inch	1	1 1 4	– 4 –½	– 7 3	1 12 7½	1 16 1½
" " transporting, for slides, iron, 8 or 9 inch	35	28 12 9¾	11 2 3¼	11 7 2	51 2 3	56 12 1⅓
" " " " 7 inch	74	57 5 4½	23 8 3¼	23 1 –½	103 14 8¼	114 17 8¼
" wood, carriages, garrison, sliding	50	6 15 4¾	74 9 6¾	23 4 3½	104 9 3	115 13 9¾
" " " " standing	90	15 6 6	168 12 1¾	52 11 1	236 9 8¾	261 18 1¼
Buckets, water sponge, 7-pr. M. L. R. gun	1	– 1 4	– 1 9	– – 10½	– 3 11½	– 4 4¾
Buffers, with bolts and nuts complete, 7 in. 6½ ton slides (sets)	3	9 3 3	4 18 –¼	4 – 4¼	18 1 7½	20 – 5¾
" carriages with india-rubber rings and metal washers	4	2 8 7	16 9 6	5 8 –½	24 6 1½	26 18 4⅓
Buoys, wood, small	4	– 2 7¾	– 2 3¾	– 1 5¼	– 6 4¾	– 7 1
Butt slips	15,000	13 4 5¾	21 9 1¾	9 18 2½	44 11 9¾	49 7 7⅓
Cans, tin, oil, 12, 9, or 6-pr.	70	6 1 11¾	3 – 11½	2 12 3¼	11 15 2½	13 – 6

Caps, canvas, sponge, rifled, B. L. and M. L., 64 and 40-pr.	214	5 6 1	7 9 7½	3 13 -¾	16 8 9¼	18 4 1¾
" " " " B. L. and M. L., 7-inch	8	- 3 10	- 5 4½	- 2 7¾	- 11 10½	- 13 1½
" " " " 9 and 8 inch, also 150 and 100-pr.	145	5 15 6	6 19 6	3 12 10¼	16 7 10¼	18 3 1
" " " " B. L. 12 or 9-pr.	24	- 6 8	- 7 6	- 4 -¾	- 18 2¾	1 - 2¼
" " " " rifled M. L, 56-pr.	1	- - 5½	- - 5½	- - 3¼	- 1 2¼	- 1 3¾
" " " " " M. L. 7-pr. (Abyssinia)	25	1 1 8	- 7 8	- 8 4½	1 17 8½	2 1 9¼
" " " S. bore, 8-inch	280	10 2 4	12 6 9	6 8 3¾	28 17 4¾	31 19 5½
" " " " 32 and 24-pr.	22	- 11 -	- 14 2½	- 7 2½	1 12 5	1 15 10¾
" " " " 9-pr.	112	1 10 8	1 18 8	- 19 9¾	4 9 1¾	4 18 8¾
" " " howitzer, 12-pr.	24	- 8 8	- 7 2½	- 4 6¼	1 - 4¾	1 2 7¼
" " mortar muzzle, 8 inch	13	- 11 4½	2 14 2½	- 18 8½	4 4 3½	4 13 4¼
" wood, mortar muzzle, 10 inch	4	1 13 1	- 19 7¼	- 15 -¾	3 7 9	3 15 -½
Capstans, crab, complete	9	40 11 -¾	33 16 6¼	21 5 5	95 13 -	105 18 7½
" head, 8, 9, and 7-inch iron carriages, and 9 and 7-inch wood carriages	14	10 14 9	2 12 1	3 16 2¾	17 3 -¾	18 19 11¼
Carriages, complete, drug, with trucks, large, removing guns to 23 tons	6	281 17 8¾	450 7 6¼	209 4 6½	941 9 9½	1,042 13 8¾
" complete, drug, with trucks, medium	5	27 19 6¼	23 1 7½	14 11 9¼	65 12 11	72 14 -½
" wood, limber, with 6 feet wheels	3	21 17 7¼	27 8 9¼	14 1 10	63 8 2½	70 4 6¼
" iron, cast, garrison, complete with beds, coins, and trucks, Russian pattern, No. 1	3	16 4 -	12 3 10¼	8 2 3	36 10 1¼	40 8 7
" wrought iron, rifled M. L. garrison sliding, with coins:						
" " casemate 9-inch	49	3,858 4 11	3,354 12 2	2,060 18 1½	9,273 15 2½	10,270 11 2¾
" " dwarf 9-inch	4	287 2 2¾	285 8 10¾	163 11 10½	736 3 -	815 5 6¼
" " dwarf 7 "	16	1,054 5 4¼	805 19 8¼	531 10 2½	2,391 15 3	2,648 16 10½
" " rifled M. L. garrison common standing, 64-pr. M. L. and B. L.	1	34 8 11½	23 16 3¾	16 12 11¼	74 18 2½	82 19 3
" " rifled B. L. garrison 7-inch, non-recoil	1	20 1 8¾	16 4 1	10 7 4½	46 13 2¼	51 13 6
" " rifled M. L. garrison common standing, 8-inch 65 cwt. or 32-pr., 56 or 58 cwt.	1	34 19 2¼	24 8 7	16 19 4½	76 7 1¾	84 11 3½
" " rifled, M. L., naval sliding with beds housing 8-inch	36	2,933 - 1½	2,363 17 8¾	1,513 9 3½	6,810 7 1¾	7,542 7 6½
" " rifled, M. L., naval sliding with beds housing 7 "	205	14,265 6 10	9,745 8 6¼	6,860 10 5¾	30,871 5 10	34,189 10 7
" " rifled M. L., naval turret, 9-in. double plate	8	866 4 9½	676 1 3¾	440 13 6¾	1,982 19 8	2,196 2 6½
" " rifled M. L., naval sliding with beds housing, double plate, 9-inch	13	1,071 5 11	1,063 9 7¾	609 19 2½	2,744 14 9¼	3,039 15 2¼
" " swivel, transporting heavy guns	1	158 - 9	70 12 6	65 6 8½	293 19 11½	325 11 11¾
" steel, travelling, with metal naves, 7-pr. M. L. R. (Abyssinia)	15	167 7 4	51 2 4	62 8 6½	280 18 2½	311 2 1
" " travelling, with metal naves, 9-pr. B. L.	1	27 19 -½	21 10 9¾	14 2 9¾	63 12 8	70 9 5½
" " travelling, 7-pr. M. L. rifled, with check rope (Abyssinia)	2	22 13 10¾	8 4 5	8 16 8¼	39 15 -	44 - 5½
" 7-pr. boat service, M. L. R. gun, with side arms	1	11 17 10½	2 12 5¼	4 2 11½	18 13 3¼	20 13 4¾
" wood, garrison, carronade complete, block trail, with trucks, coin, and depressing blocks, 32-pr.	10	27 7 10¼	57 13 10¼	24 6 2¾	109 7 11¼	121 3 1
" block trail, with trucks, coin and depressing blocks, 24-pr.	1	2 17 2½	4 2 6¼	1 19 11¼	8 19 8	9 18 11¾
" block trail, with trucks, coin, and depressing blocks, 12-pr.	1	2 13 5½	3 5 2½	1 13 11	7 12 7	8 8 11¾

No. 1.—Royal Carriage Department, Woolwich Arsenal—(C.) Return of Stores made New, &c.—*continued.*

DESCRIPTION.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Carriages, Wood:						
Garrison, complete, common, standing, 4 trucks complete, with beds, 2 coins, and elevating screws, 8-inch, 65-cwt. or 60-cwt. - - - - -	1	7 15 2¾	8 18 2¼	4 15 3¼	21 8 8¼	23 14 9¼
" " common, standing, 4 trucks complete, with beds, 2 coins, and elevating screws, S. B. 24-pr. 50 or 48 cwt. - - - -	20	126 16 6¼	165 2 8½	83 8 5¼	375 7 8	415 14 7¾
" " common, standing, 4 trucks complete, with beds, 2 coins, and elevating screws, S. B. 18-pr. 42-cwt. - - - - -	13	83 13 1¾	135 14 6¾	62 13 8½	282 1 5	312 7 9½
" " with W. I. beds, coins, and elevating screw, R. chock, howitzer, 8-inch - - -	3	19 10 1	25 13 -¼	12 18 -½	58 1 1¾	64 5 11½
Garrison, common, standing, 32-pr. 58-cwt. - - - -	2	7 14 2¾	21 1 8¼	8 4 6¾	37 - 5¾	41 - -¾
Mahogany, common, standing, 3-pr. brass - - - -	2	22 19 5	7 11 11½	8 14 8¼	39 6 -¾	43 10 6¾
Garrison, complete, with beds, coins, and elevating screw-sliding, dwarf, rifled B. L. 40-pr. - - -	7	72 18 1¼	106 1 -	51 2 7¾	230 1 9	254 16 4½
" " with beds, coins, and elevating screw-sliding, dwarf, S. B. 32-pr. 58 and 56-cwt. - -	16	155 12 2¼	270 12 11	121 15 10	548 - 11¼	606 19 -½
Naval, complete gun, S. B. 6-pr., top and under with beds, coins, and trucks - - - - - - - -	12	41 17 3	29 19 11¼	20 10 7½	92 7 9¾	102 6 5¼
" " common, with coins, linch pins, and trucks, S. B., *with bed, 32-pr. 25-cwt.* - - - -	10	39 17 1¼	41 11 3	23 5 3¼	104 13 7½	115 18 8
" " rear chock, with beds, coins, linch pins, and trucks, rifled, with screws, 20-pr. B. L. - -	8	26 7 10¾	32 11 5½	16 16 11½	75 16 3¾	83 19 3½
" " *with coins, rear chock, S. B.*, with linch pins, *and trucks and beds, howitzer, 24-pr.* - -	5	17 8 10¾	13 15 5½	8 18 4¾	40 2 9	44 9 -½
" " with coins, revolving, R., with elevating screw, 40-pr. breech - - - - - - -	9	174 8 7¾	149 5 8½	92 9 10¾	416 4 3	460 19 -
" " transporting, 6½ and 12-ton guns - - -	4	21 14 9½	26 6 6	13 14 8	61 15 11½	68 8 9¼
Travelling, with limbers, field, complete, with boxes, S. B. service, with cartouches, howitzer, 24-pr. - - - -	20	551 15 8½	529 19 7¼	309 1 9½	1,390 17 1¼	1,540 7 -¼
" with limbers, field, complete, with boxes, rifled service, with cartouches, 12-pr. - - - - - -	1	42 19 6	46 2 7½	25 9 2½	114 11 4	126 17 7½
" with limbers, field, complete, with boxes, rifled service, with cartouches, 6-pr. - - - - - - -	15	320 8 11	338 - 4¼	188 2 9¾	846 12 1	937 12 -¾
" with limbers, complete, siege gun, B. L. rifled, 64-pr.	8	247 2 1½	308 - -½	158 12 2½	713 14 4½	790 8 8¼
" " " " " " 40-pr., with boxes and cartouches - - - - -	12	566 13 10¾	577 2 5	326 16 4½	1,470 12 8½	1,628 14 1¾
" with limbers, complete, siege gun, S. B. 32-pr. 50-cwt. -	5	149 19 -¾	182 11 4	95 - 2½	427 10 7¼	473 9 8¼
" " " " S. B. 24-pr. 50 or 48-cwt.	1	9 18 11¼	36 10 2¾	13 5 5¾	59 14 7¾	66 3 -¾

Travelling, with limbers complete, siege mortar, 13-inch	1	45 14 1¾	50 11 5	27 10 2¼	123 15 9	137 1 10¼
" " " " 10-inch	1	25 2 10½	30 3 1	15 16 –	71 1 11½	78 14 9½
" " " " 8-inch	2	49 5 2	50 15 8½	28 11 8¼	128 12 6¾	142 9 1
" with limbers incomplete, siege mortar, 13-inch	2	83 16 8	80 19 5½	47 1 9½	211 17 11	234 13 5¼
Cartouches, canvas, rifled, field, 12-pr. or 9-pr., also naval and 6-pr., special pattern	424	31 17 6	52 1 10¼	23 19 10	107 19 2¼	119 11 3¼
" " rifled, mountain, 7-pr.	72	3 16 6	4 3 8½	2 5 9¼	10 5 11¾	11 8 1¼
" " S. B. of sorts	141	9 7 8	18 10 7	7 19 6	35 17 9	39 14 10¾
Carts, with wheels, baggage, forage pattern, with hoops and covers	6	51 11 –¼	67 18 8	34 2 9½	153 12 5¾	170 2 8¾
" " break	1	20 6 9¾	9 8 6½	8 10 1¼	38 5 5½	42 7 8¾
" " coal or dust	2	23 17 2¾	22 2 3½	13 2 8¾	59 2 3	65 9 4
" " dray	4	18 5 2¾	37 2 –½	15 16 4½	71 3 7¾	78 16 8
" " fatigue or gravel	6	58 7 11¾	66 11 10	35 14 3¼	160 14 1	177 19 6¾
" " forage, with cover tip	7	93 3 4¼	78 2 1¾	48 18 9	220 4 3	243 17 7¾
" " hand, common, to tip	2	8 6 4½	5 12 2	3 19 7	17 18 1½	19 16 7½
" " " for conveying forage	1	5 8 1	7 17 2	3 15 9½	17 1 –½	18 17 8½
" " " Russian pattern	1	3 11 3	4 16 6¾	2 7 11½	10 15 9¼	11 18 11½
" " " watering	1	8 1 3¼	8 3 4½	4 12 9	20 17 4¾	23 2 3
" " Maltese, with covers, common, strengthened	1	4 15 4¼	7 3 2½	3 8 2	15 6 8¾	16 19 8½
" " medical store, with cover	17	187 17 4¾	102 19 5¾	83 2 –½	373 18 11	414 2 9¾
" " regimental, for cavalry, not to tip	1	16 1 9½	10 4 11¾	7 10 6¼	33 17 3½	37 10 1
" " sling	4	85 8 3¼	95 5 6½	51 12 6¾	232 6 4½	257 5 9½
" " trench	22	129 18 11¾	159 19 9	82 16 10½	372 15 7	412 16 11½
" without wheels, hand, common	9	30 3 8	22 11 1¼	15 1 4½	67 16 1¾	75 1 10¼
" " " Maltese, with covers	161	276 9 4¼	366 4 4	183 12 7¾	826 6 4	915 2 8¼
Cases, leather, cartridge, 9-inch, R. M. L. gun	5	2 10 –	5 16 3¼	2 7 6	10 13 9¼	11 16 9
" " " with block, 18·05 gun	1	1 16 4¼	6 10 11	2 7 9½	10 15 –¾	11 18 2¼
" " boat magazine	6	1 1 1½	3 12 11¼	1 6 10½	6 – 11¼	6 13 11¼
" " elevating screw, 7-pr. M. L. R. (Abyssinia)	14	– 17 6	– 13 6½	– 8 10½	1 19 11	2 4 2½
" " portfire	1	– – 9	– 1 –½	– – 6	– 2 3½	– 2 6½
" " rocket machine, 7-pr. M. L. R. (Abyssinia) sets	9	– 12 –	1 5 11¾	– 10 10¼	2 8 10	2 14 1
" " vent-piece, 12-pr. or 9-pr. B. L.	10	– 13 11¾	2 7 10½	– 17 8	3 19 6¼	4 8 –¾
" " for vices, 7-pr. M. L. R. (Abyssinia)	2	– 4 –	– 8 6¾	– 3 7	– 16 1¾	– 17 10½
" tin, lithographs	24	1 16 –	1 2 7¼	– 16 9	3 15 4¼	4 3 5¼
" wood, facing implements, without padlocks, 12-pr. or 9-pr.	34	31 4 7½	14 10 11¼	13 1 7¾	58 17 2	65 3 8¼
" " " " " 6-pr.	2	2 1 2¼	– 18 1¾	– 16 11½	3 16 3½	4 4 5¾
" " powder, metal lined, quarter, common	4,870	1,241 1 6¼	2,702 16 3½	1,126 17 6¼	5,070 15 4	5,615 16 1
" " miners, branch	1	– 2 9¼	– 7 11	– 3 –½	– 13 8¾	– 15 2½
" " " gallery	1	– 6 1½	– 9 6½	– 4 5¾	1 – 1¾	1 2 3¾
" " " shaft	1	– 6 3	– 10 1	– 4 8	1 1 –	1 3 4¼
" " various	2,967	626 4 11¾	829 16 4½	416 – 9¼	1,872 2 1½	2,073 6 7½
Castings of sorts	2	– 4 4	– 1 6	– 1 8	– 7 6	– 8 3½
Chains and staples for Belgian trestles	100	– 7 3¼	– 17 3¼	– 7 –	1 11 6½	1 14 11¼
" iron, connecting	4	– 5 2½	– 5 10	– 3 3	– 14 3½	– 15 10
" " lock	8	– 7 8¾	– 5 11¾	– 3 11	– 17 7½	– 19 6¼
" " of sorts, fathoms	97	– 5 6	2 1 8¾	– 13 5¾	3 – 8½	3 7 2¾
Chapes, for tents, brown leather with buckles	12,000	38 10 7¼	18 10 10	16 6 1¾	73 7 7	81 5 3¾
Cheeks, gyn, 18-feet, near	1	1 14 2½	3 3 10	1 8 –¼	6 6 –¾	6 19 7½
Chesses, for rafts (36 gallon casks)	50	12 8 11	25 15 6¾	10 18 5	49 2 10¾	54 8 6½

No. 1.—Royal Carriage Department, Woolwich Arsenal—(C.) Return of Stores made New, &c.—*continued.*

DESCRIPTION.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Chests, carpenters', packsaddle stores, No. 1	3	3 13 6	1 16 9¼	1 11 6	7 1 9¼	7 17 –½
" " " No. 2	3	3 8 5½	1 13 3½	1 9 –¾	6 10 9¾	7 4 10½
" " " tools, No. 1	4	5 1 4¼	3 1 –¼	2 6 4¾	10 8 9¼	11 11 2½
" " " No. 2	4	5 1 3¼	2 13 4½	2 4 2¼	9 18 10	11 – 2¾
" laboratory stores	17	20 18 2¼	15 1 3	10 5 6¾	46 5 –	51 4 5
" miners' packsaddle, No. 1	4	3 19 11½	2 1 2	1 14 7¼	7 15 8¾	8 12 5½
" " " No. 2	4	5 1 3	2 12 10	2 4 –¼	9 18 1¼	10 19 4¾
" " " stores	4	3 19 11¾	2 7 2	1 16 4	8 3 5¾	9 1 –½
Chisels, rod, with handles, cold and hot	2	– 1 11	– – 7½	– – 8¾	– 3 3¼	– 3 7½
Chocks, wood, dismounting, 8-inch, or 32-pr. or 40-pr.	12	21 8 10¾	23 11 4¼	12 17 2	57 17 5	64 1 9¾
" " low broadside	4	3 12 2¼	5 – 9¼	2 9 5	11 2 4½	12 6 3¼
Coatings, sponge, for B. L. guns, 64-pr.	50	1 – 10	12 – 4	3 14 7½	16 15 9½	18 11 10¾
" " 12-pr. or 9-pr.	152	2 3 2	17 19 5½	5 15 –½	25 17 8	28 13 3¾
Coins, wood, for carriages, garrison, 9-in., 8 in., 7-in., land or sea	178	27 18 –	59 9 6¼	24 19 3¾	112 6 10	124 8 3½
" " naval, common, S. B., 18-pr. to 6-pr.	57	7 4 9	4 16 7¾	3 8 11¾	15 10 4½	17 3 8¾
" " " 20-pr., 12-pr., and 9-pr., also 24-pr. and 12-pr. howitzer	5	– 11 8	– 6 2¾	– 5 1½	1 3 –¼	1 5 6
" " " 40-pr.	2	– 1 3¼	– 1 10	– – 10¾	– 4 –	– 4 5¼
" mortar bed, land service mortar, 10-inch	37	18 7 6	23 6 6¼	11 18 3¾	53 12 4	59 7 7¼
" " " 8-in.	24	8 12 11	7 9 6¾	4 12 1¾	20 14 7½	22 19 2¼
" " " 5½-in., 75 cwt.	2	– 12 10¼	– 5 11½	– 5 4½	1 4 2¼	1 6 9½
" hand, L. or S. service, except top carriage, naval	144	3 14 11	12 – 5¾	4 10 1½	20 5 6¼	22 9 1½
Collars, metal, for wrought iron single plate carriages	35	5 10 10	18 11 1¾	6 17 8½	30 19 8¼	34 6 3½
Compressor, iron, with screws, 8 in., or 32-pr.	6	5 14 1¼	3 2 10½	2 10 6¾	11 7 6½	12 11 11½
" side plate, two plates, with bolts and screws, R. B. L., 7-in., 64-pr. and 40-pr.	12	75 14 –	38 12 –	32 13 2	146 19 2	162 15 1¼
Couples, trace	896	4 7 5¾	1 5 4	1 12 2¾	7 5 –½	8 – 7½
Covers, canvas, cart, hospital	2	1 15 10	2 8 4¾	1 4 –¾	5 8 3½	5 19 11¼
" " " medicine	1	– 3 10	1 2 5½	– 7 6	1 13 9½	1 17 5¼
" " " Royal Engineers	5	1 19 7	6 – 5½	2 5 8¾	10 5 9¼	11 7 10¾
" " gun, 32-pr.	2	– 9 10	– 18 1¾	– 8 –	1 15 11¾	1 19 10¼
" " shot furnace	35	9 13 4	27 2 2¼	10 10 2	47 5 8¼	52 7 4
" vent, slot, or aprons, for breech loading guns, 7-inch	188	28 18 8	54 12 5¼	23 17 5½	107 8 6¾	118 19 6
" " " 64-pr.	79	24 6 6	19 4 3½	12 8 9¾	55 19 7¼	61 19 11¼
" " " 40-pr.	41	3 9 3¼	5 17 10½	2 13 5¾	12 – 7½	13 6 6
" " " 20-pr.	52	5 – 5½	6 12 4½	3 6 6¼	14 19 4½	16 11 6¼
" " " 12-pr. or 9-pr.	131	14 14 5½	11 16 7¾	7 11 9	34 2 10¼	37 16 3
" " " 6-pr.	26	2 8 7	1 16 10½	1 4 5	5 9 10½	6 1 8¼

Covers, wagon, Flanders, for ammunition	7	3 19 8¾	8 6 11⅓	3 10 5¾	15 17 2	17 11 3
" " forage	40	24 2 3½	52 1 7½	21 15 5¼	97 19 4¼	108 9 11⅓
" " intermediate pattern	63	44 14 4¾	85 13 9¼	37 5 2¾	167 13 4¾	185 13 10¼
Cradles, iron, 7-pr., mountain artillery (Abyssinia)	57	90 3 5¼	15 8 1½	30 3 3¾	135 14 10½	150 6 8
Curves, metal pieces, with screws	3	– 11 1½	7 14 11	2 7 5⅓	10 13 6	11 16 6
Cushions, wagon ambulance	11	1 11 9¾	4 4 9	1 13 3½	7 9 10¼	8 5 11¾
" barrel powder	4	2 – –½	9 – –¼	3 2 10⅓	14 2 11¼	15 13 4
Cylinders, copper, for axletree boxes, 12-pr. or 9-pr.	72	1 16 –	2 17 6¼	1 6 8¾	6 – 3	6 13 2
" C. I., for trunnions, 64-pr.	1	1 1 –	– 8 –	– 8 3¼	1 17 3¼	2 1 3¼
Dowels, wood, for platforms	500	– 1 11¼	– 2 –	– 1 1⅓	– 5 –¾	– 5 7¼
Drawings and specifications	9	9 8 6	– 7 –	2 15 10¾	12 11 4¾	13 18 5
Drum, or capstan-head, iron	1	– 15 3¾	– 4 10⅓	– 5 9	1 5 11¼	1 8 8⅓
Drifts, wad-making, 10-inch	2	– 1 7¾	– 9 8¾	– 3 3	– 14 7⅓	– 16 2¼
" " 8-inch	2	– 1 2½	– 6 4½	– 2 2¼	– 9 9¼	– 10 10
" " 32-pr.	2	– – 10¼	– 3 10½	– 1 4¼	– 6 1	– 6 8¾
" " 24-pr.	2	– – 9¼	– 3 7¼	– 1 3	– 5 7½	– 6 2¾
Eccentrics, for rollers carriages, 9 inch, rear	10	4 15 –	3 3 4	2 5 3	10 3 7	11 5 5¾
" " 7-inch, "	20	8 2 6	4 16 8	3 14 –¾	16 13 2¾	18 9 –½
Ellipses, iron, packsaddle, with straps (sets)	20	7 11 –¼	3 19 3¾	3 5 9¾	14 16 1¾	16 7 11¾
Ends, arm chest	200	1 7 9¼	3 6 2¾	1 6 10¼	6 – 10¼	6 13 10¼
" barrow, front	50	– 6 7¾	– 15 10¾	– 6 5¼	1 8 11¾	1 12 1¼
" " rear	50	– 6 –	– 14 4	– 5 9¾	1 6 1¾	1 8 11½
Eyes, carriage trail, with rivets, third class, 20-pr., 12-pr., or 9-pr., 9-pr., or 6-pr., S. B. gun, or 24-pr. or 12-pr. howitzer	71	47 16 1¼	28 – 10½	21 13 5¼	97 10 5	107 19 11⅓
Felloes in the rough, field, cart, forage, 5′ 0″	26	– 4 1¾	1 15 2½	– 11 3	2 10 7¼	2 16 –½
" " " light	254	2 7 7½	17 16 10½	5 15 7	26 – 1	28 16 –
" general service	128	– 18 9¼	7 12 7	2 8 11½	11 – 3¾	12 4 –
" siege, carriage	50	– 16 8	11 13 4	3 11 4¾	16 1 4¾	17 15 11¼
" " sling cart	95	1 9 8	18 13 10	5 15 3¾	25 18 9¾	28 14 7
" of sorts	791	9 15 4⅓	62 14 2	20 14 2	93 3 8½	103 4 –½
Fids, wood, rifled gun, B. L., 40-pr., breech	10	1 3 4	1 15 11¾	– 16 11½	3 16 3¼	4 4 5¾
" " " " 40-pr., muzzle	10	– 19 11	1 5 7	– 13 –	2 18 6	3 4 9½
" " " " 20-pr., breech	5	– 7 6¼	– 9 7⅓	– 4 10½	1 2 –¼	1 4 4¾
" " " " 20-pr., muzzle	5	– 5 10	– 7 2¼	– 3 8¾	– 16 9	– 18 6¾
" " " " 12-pr. or 9-pr., breech	6	– 8 –	– 7 10	– 4 6¼	1 – 4¼	1 2 6½
" " " " 12-pr. or 9-pr., muzzle	6	– 5 3	– 5 7	– 3 1¼	– 13 11¼	– 15 5¼
" " " M. L., 13-inch	5	1 18 6⅓	3 5 –½	1 9 7	6 13 2	7 7 5¼
" " " " 12-inch	6	2 2 5½	3 10 10¼	1 12 4½	7 5 8¼	8 1 5½
" " " " 9-inch	44	9 15 10	14 – 11½	6 16 2¾	30 13 –¼	33 18 11
" " " " 8-inch	10	1 16 7¾	2 11 2	1 5 1	5 12 10¾	6 5 –¼
" " " " 7-inch	39	5 15 7¾	7 19 –	3 18 5¾	17 13 1⅓	19 11 1
" " 7-inch breech	5	– 19 10	1 16 8	– 16 1¾	3 12 7¾	4 – 5⅓
" " lignum vitæ, large size	3	1 1 3⅓	1 2 7½	– 12 6⅓	2 16 5½	3 2 6¼
" " rifled making, wads	3	– 7 4¼	2 2 2¼	– 14 1¾	3 3 8¼	3 10 6¼
Fittings for check-rope, 9-inch 12-ton gun (sets)	1	6 12 8	4 18 7¼	3 6 1	14 17 4¼	16 9 3¾

No. 1.—Royal Carriage Department, Woolwich Arsenal—(C.) Return of Stores made New, &c.—*continued.*

DESCRIPTION.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Flanges, cast iron, for wood, dwarf, and casemate platform, 8-inch or 32-pr., with service trucks	12	2 3 5	13 10 2¼	4 9 7¼	20 3 2½	22 6 6½
" wrought iron, with truck for 9-in. W. I. carriage	1	1 – –½	4 16 9	1 13 4¼	7 10 1¾	8 6 3¼
" " platforms, casemate, 12 or 13-inch, in two pieces rear	2	7 4 4	3 – 4	2 18 5¾	13 3 1¾	14 11 5
" " 9 or 7 inch rear	3	6 10 –	4 19 –	3 5 6	14 14 6	16 6 2
Flaps, metal slides, with pins, 8 and 9-in.	17	8 5 11¼	21 14 5½	8 11 6½	38 11 11¼	42 14 10¾
" " " 7 in.	55	26 17 1	70 5 9	27 15 1½	124 17 11½	138 6 5½
" " " of sorts	3	– 18 9	10 4 7½	3 3 9¾	14 7 2¼	15 18 –½
Forges, portable, for carts or wagons, with frames	20	162 10 2½	254 2 –½	119 – 9	535 13 –	593 4 6
Forgings, rough, for stop handspike	283	22 10 8½	17 14 11¾	11 10 2¼	51 15 10½	57 7 2½
Formers, wood, wad gun, R.M.L., 9-inch	1	– 3 8	– 6 4½	– 2 10¼	– 12 10¾	– 14 3½
" " " " 8-inch	14	3 14 1½	3 16 8	2 3 1¼	9 13 10¾	10 14 8¾
" " " " 7-inch	22	3 2 6¾	4 17 10½	2 5 10	10 6 3¼	11 8 5¼
Frames, iron, with sheaves, preventor rope, 7-inch breech	77	73 3 7¼	59 11 –¾	37 18 7	170 13 3	189 – 1½
" wood, mining, of sorts	38	6 10 4¾	12 – 10¾	5 6 1	23 17 4½	26 8 8¼
Fulcrums	42	2 11 8	4 11 1¼	2 – 9½	9 3 6¾	10 3 3½
Futchels, of sorts	168	2 13 4¾	11 3 2¾	3 19 –½	17 15 8	19 13 10¾
Garland's iron shell and shot, 13. 4. 2½ × 4. 2½	11	2 7 5¼	8 6 10½	3 1 2¾	13 15 6½	15 5 2
" " 10. 7. 6¼ × 5. 1¼	4	– 19 8¼	3 8 6½	1 5 2½	5 13 5¼	6 5 7½
" " 10. 3. 3½ × 3. 3½	6	– 11 –	2 4 3¾	– 15 9¾	3 11 1½	3 18 9¼
" " 8-in. or 68-pr., 5. 5 × 4. 9	1	– 3 –½	– 12 –¼	– 4 3¾	– 19 4½	1 1 5½
" " " 6. 0 × 4. 0½	1	– 6 5	– 11 10½	– 5 2¾	1 3 6¼	1 6 –½
" " " 4. 8½ × 4. 0¼	5	– 19 5½	2 10 4¾	– 19 11½	4 9 9¾	4 19 5
" " " 2. 8 × 2. 8	33	2 19 8¾	8 17 –¼	3 7 7¾	15 4 4¾	16 17 1½
" " 32-pr. 4. 2 × 4. 2	1	– 3 1¾	– 8 9	– 3 4¾	– 15 3½	– 16 11¼
" " " 4. 9 × 3. 2	8	1 6 11¼	2 18 10	1 4 6	5 10 3¼	6 2 1½
" " " 3. 8 × 3. 8	1	– 3 8¾	– 7 6	– 3 2½	– 14 5¼	– 15 11¾
" " 24-pr. 4. 5 × 2. 10	28	3 11 5½	8 16 7	3 10 10¼	15 18 10¾	17 13 2¼
" " 18-pr. 3. 10 × 2. 6½	29	4 3 8¾	7 9 7½	3 6 8	15 – –¼	16 12 3¼
" " " 1. 9 × 1. 9	44	3 3 7¼	8 5 2¾	3 5 4½	14 14 2½	16 5 10
" " 12-pr. 4. 5 × 3. 5	14	2 – –¼	4 8 3¼	1 16 7¾	8 4 11¼	9 2 8¼
" " " 1. 6½ × 1. 6½	19	1 5 –½	2 – 8½	– 18 9¼	4 4 6¼	4 13 7¼
" " special	11	2 12 6½	9 18 5	3 11 8½	16 2 8	17 17 4¼
" in four pieces, with nuts and bolts	11	4 10 6½	9 13 6¾	4 1 2	18 5 3¼	20 4 6¼

Gauges, sponge, C. iron, cylindrical, rifled, 9-inch	4	4 19 3	– 16 2¾	1 12 11¾	7 8 5⅓	8 4 5
" " " 8-inch or 68 pr.	4	4 8 11½	– 13 4½	1 9 2¾	6 11 6½	7 5 8⅓
" " " 7-inch	4	3 17 7	– 12 2¼	1 5 7¼	5 15 5	6 7 9¾
" " " S. B., 150-pr.	4	5 1 10	– 16 –	1 13 8	7 11 6	8 7 9¼
" " " " 32 pr.	5	5 9 5½	– 15 2¼	1 15 7¼	8 0 3	8 17 7¼
" " sectional, S. B., 10-inch	4	4 19 9¾	1 2 4¼	1 14 10¾	7 17 –¾	8 13 11¼
" " " 8-inch	5	6 5 11¼	1 5 2	2 3 2¼	9 14 3⅓	10 15 2
Geese, with grummets	50	5 18 1¾	13 12 2¾	5 11 6½	25 1 11	27 15 10¼
Gyns, complete with tackle, triangle, with levers and wood trucks:						
18 feet, heavy	11	210 10 8½	413 16 10¼	178 8 –½	802 15 7¼	889 1 4¼
" light	13	337 9 6	252 9 9	168 11 4½	758 10 7½	840 1 3
16 feet	4	46 7 11¼	44 11 11	25 19 11¾	116 19 10	129 11 4
Handles, axes, pick	100	1 4 3¼	1 14 –¾	– 16 8	3 15 –	4 3 –¾
" hammer, sledge	928	12 17 5	7 6 9½	5 15 6¼	25 19 8¾	28 15 6½
" " flogging	200	1 15 –	– 14 10	– 14 3	3 4 1	3 10 11½
" " hand	1,000	7 15 –	3 5 –	3 2 10⅓	14 2 10½	15 13 3¼
" screw jack (Colonel Clerk's)	2	– 6 4¾	– 3 9½	– 2 10¾	– 13 1	– 14 5¾
Handspikes, land service, traversing, 32-pr. to 6-pr., smooth bore	276	23 7 4¼	27 12 10½	14 11 6¼	65 11 9	72 12 9
" " " 3 pr., S. B, or 6-pr., rifled	50	3 6 8¾	2 8 8	1 12 11¾	7 8 4½	8 4 3¾
" sea service, roller, wood, 6 feet, and land service	262	179 1 11½	123 5 –	86 7 9¼	388 14 8¾	430 10 4¾
" " stop, 4 feet	595	136 16 8¼	47 1 9½	52 11 –¼	236 9 6	261 17 10¼
Harness, men's light (sets)	112	25 3 1½	104 14 2	37 2 1½	166 19 5	184 18 4¼
Haversacks, canvas, for grenades	1	– 1 1	– 1 2¾	– – 7¾	– 2 11½	– 3 3¼
Heads, rammer, rifled gun, M. L. R., 12-inch	1	– 3 6¾	– 6 1	– 2 9¼	– 12 5	– 13 9
" " " " 9-inch and 150-pr., S. B.	11	1 2 6½	1 15 3½	– 16 6¼	3 14 4¼	4 2 4¼
" " " " 8-inch	20	1 15 11	2 8 9	1 4 2¼	5 8 10¼	6 – 6¾
" " " " 7-inch or 100-pr., S. B.	31	1 14 6¾	2 15 7	1 5 9	5 15 10¾	6 8 4¼
" " " " 64-pr.	7	– 3 5	– 1 8¼	– 1 5½	– 6 6¾	– 7 3¼
" " smooth-bore gun, 56-pr.	1	– – 6¾	– – 2	– – 2⅓	– – 11¼	– 1 –⅓
" " S. B. gun, with stave, 150-pr.	3	– 2 9	– 1 9	– 1 3⅓	– 5 9½	– 6 5
" " " " 100-pr.	3	– 2 7	– 1 8¼	– 1 2¾	– 5 6	– 6 1
" " " " 10-inch	4	– 2 8½	– 2 1½	– 1 4⅓	– 6 2½	– 6 10½
" " " " 8-inch	4	– 2 5½	– 1 9	– 1 2¼	– 5 4¾	– 5 11½
" " " " 68-pr.	4	– 2 10¾	– 1 10¾	– 1 4¼	– 6 1¾	– 6 9¾
" " " " 32-pr.	4	– 2 –¾	– 1 1¼	– – 11	– 4 1	– 4 6¼
" " " " 18-pr.	1	– – 6	– – 4¾	– – 3	– 1 1¾	– 1 3¼
" " " " 12-pr.	41	– 5 8¾	– 4 5¼	– 2 10¾	– 13 –¾	– 14 5½
" " S. B. howitzer, 10 and 8 inch, also 13, 10, and 8 inch mortars	1	– – 6	– – 5½	– – 3¼	– 1 2¾	– 1 4¼
" sponge, R. M. L. gun, 13-inch	4	– 9 10	4 3 10½	1 6 9⅓	6 – 6	6 13 5½
" " " 12-inch	7	– 14 11¾	7 4 10	2 5 7¾	10 5 5½	11 7 6½
" " " 9-inch	110	7 2 11¾	63 13 8¾	20 4 9⅓	91 1 6	100 17 3½
" " " 7-inch	25	– 16 11	9 7 4¼	2 18 4⅓	13 2 7¾	14 10 10½
" " " 64-pr.	319	15 4 9	103 15 4¼	34 – –¾	153 – 2	169 9 1¼
" " " 56-pr., with spare stave	1	– 1 –¼	– 9 4⅓	– 2 11⅓	– 13 4¼	– 14 9½

No. 1.—Royal Carriage Department, Woolwich Arsenal—(C.) Return of Stores made New, &c.—*continued.*

DESCRIPTION.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Heads, sponge, S. B. 32-pr. carronade	20	– 16 10¾	4 18 –	1 12 10¼	7 7 9	8 3 7½
" " S. B. gun, 10-inch	3	– 4 2½	1 13 –	– 10 7½	2 7 10	2 12 11¾
" " " 8-inch	141	6 7 2	51 17 2¾	16 12 8½	74 17 1¼	82 18 –¼
" " " 68-pr.	3	– 3 7	1 6 7	– 8 7½	1 18 9½	2 2 11½
" " " 32-pr.	301	13 12 9½	74 8 1	25 3 1½	113 4 –	125 7 4½
" " " 24-pr.	122	5 3 2¾	28 7 8½	9 11 8½	43 2 7¾	47 15 4¼
" " " 6-pr.	59	1 14 9	5 14 11	2 2 9	9 12 5	10 13 1¼
Hinges, box centre	1	– 1 3	– – 10¼	– – 7¼	– 2 8½	– 3 –
– metal, of sorts	4	– 8 8½	– 19 2¼	– 7 11¾	1 15 10¼	1 19 8¾
Holdalls, leather, artificer's tool, 7-pr., M. L., rifled	4	– 2 8	– 4 6	– 2 –½	– 9 2½	– 10 2¼
" " carpenter's tools, No. 1.	2	– 2 –	– 3 10	– 1 7¾	– 7 5¾	– 8 3½
" " " " No. 2.	2	– 2 –	– 2 9	– 1 4¼	– 6 1¼	– 6 9
" " " " No. 3.	2	– 2 –	– 2 9	– 1 4¼	– 6 1¼	– 6 9
" " gun, 7-pr., India	27	– 15 9	1 12 10¼	– 13 10¾	3 2 6	3 9 2¾
" " miners'	2	– 2 –	– 2 9	– 1 4¼	– 6 1¼	– 6 9
" " small stores, 7-pr., M. L. R. (Abyssinia)	12	– 7 –	– 11 11	– 5 5	1 4 4	1 6 11½
Hooks, limber, complete, carriage	10	4 1 6¼	3 19 2¼	2 5 11	10 6 7½	11 8 10
" of sorts	78	5 18 11¾	5 17 8	3 7 7½	15 4 3¼	16 16 11¾
Iron, wrought (cutting only)	254	– 19 3	–	– 5 6	1 4 9	1 7 5
Ironwork, of sorts (sets)	4	32 13 8	8 1 10½	11 13 –¼	52 8 6¾	58 1 3¼
Joints, metal, for flaps, of iron slides	1	– 17 1½	2 8 8¼	– 18 9¾	4 4 7½	4 13 8¾
Keys, forelock, iron	5,560	24 7 1½	10 18 3½	10 1 6¾	45 6 11¾	50 4 5½
" capsquare, with chains for carriages, wood, 20, 12, 9-pr., 6-pr. R., and 24 and 12-pr. howitzer	78	2 15 8	– 9 6	– 18 7¼	4 3 9¼	4 12 9½
" " with chains for carriages, 9, 7, 8-inch, M. L. R.	477	43 13 –¾	7 9 7¾	14 12 3¼	65 14 11¾	72 16 3¾
" 7-pr., M. L. R., spring lock	952	6 – –	23 13 –	8 9 5¼	38 2 5¼	42 4 4¾
" iron, of sorts	137	1 13 3¾	– 16 5¼	– 14 2¼	3 3 11¼	3 10 9¾
Knees, iron	3	2 6 2¾	1 4 3	1 – 1½	4 10 7¼	5 – 4
Ladders, lamplighters', 15 feet	3	1 7 5½	– 11 11¼	– 11 3	2 10 7¾	2 16 1¼
" " 12 feet	3	1 9 4½	– 10 7½	– 11 5¼	2 11 5¼	2 16 11¾
" standing, 30 feet	3	4 – –	3 12 9¾	2 3 8	9 16 5¾	10 17 7¼
" " 24 feet	2	2 1 10	1 17 8½	1 2 8¾	5 2 3¼	5 13 3
" " 22 feet	1	– 16 –¾	– 17 3¼	– 9 6¼	2 2 10¼	2 7 5½

" " 18 feet	6	4 2 9¼	4 – 6½	2 6 8	10 9 11¾	11 12 6¾
" " 17 feet	1	– 13 2	– 12 5	– 7 3¾	1 12 10¾	1 16 5¼
" " 12 feet	10	4 9 7	4 12 9	2 12 1¼	11 14 5¼	12 19 7¾
" " 10 feet	7	2 12 10¾	2 12 11	1 10 3½	6 16 1	7 10 8½
" " 8 feet	3	1 2 1	– 7 4¾	– 8 5	1 17 10¾	2 1 11¾
" step, magazine, double, 10 feet	1	1 6 8¼	1 2 7¾	– 14 1¼	3 3 5¼	3 10 3¼
" of sorts	3	3 4 11½	2 17 7¾	1 15 –¼	7 17 7½	8 14 6¾
Legs, wood, for rear of common traversing platform	2	– 15 4¾	– 5 10½	– 6 –¾	1 7 4	1 10 3¼
Levers, iron, adjusting, with keys and chains, 9 and 8-inch	9	5 13 3	– 17 3	1 17 3¼	8 7 9¼	9 5 9¾
" " " " " 7-inch	55	34 12 1	5 5 5	11 7 10¼	51 5 4¼	56 15 6¾
" " " top, 9 or 12-pr.	40	4 – –	– 15 –	1 7 1¾	6 2 1¾	6 15 3¼
" " compressing, 9 and 8-inch	39	26 13 –	6 3 6	9 7 7	42 4 1	46 14 9½
" " " 7-inch	291	198 17 –	46 1 6	69 19 7½	314 18 1½	348 15 1
" " " top, 12 or 9-pr.	41	7 – 1	1 3 11	2 6 10¼	10 10 10¼	11 13 6¼
" " lifting joint, S. S., common	3	– 11 7¾	– 4 6½	– 4 7½	1 – 9¾	1 3 –½
" " " " shaped	3	– 7 10	– 7 4¾	– 4 4¼	– 19 7	1 1 8¼
" wood, 16 feet	8	2 8 1½	4 14 8½	2 – 9¾	9 3 7¾	10 3 4½
" " 15 feet	2	– 11 9¾	1 2 4¼	– 9 9¼	2 3 11¼	2 8 8
" " 14 feet	13	3 2 –	6 3 5½	2 13 –¼	11 18 5¾	13 4 1¼
" " 12 feet	63	7 1 –¼	19 1 5	7 9 3¼	33 11 8½	37 3 10¾
" " 10 feet	69	6 7 8¼	15 7 3¾	6 4 3½	27 19 3½	30 19 4¾
" " 9 feet	78	5 4 10¼	12 12 –	5 1 11½	22 18 9¾	25 8 1½
" " 8 feet	20	1 6 5½	2 17 5	1 3 11¼	5 7 9¾	5 19 4¾
" gyn, 18 feet, sling, cart or wagon	108	9 16 11¾	14 12 7½	6 19 10¾	31 9 6	34 17 2
" wood, iron pointed, elevating	1,167	338 2 –¼	151 9 11½	139 17 10	629 9 9¾	697 3 –½
" " iron shod, crow, 7 feet	192	38 17 9	23 15 2¼	19 6 6¾	86 19 6	96 6 5¾
" " " " 6 feet	260	47 3 6¼	35 15 9½	23 14 1¼	106 13 5	118 2 8¾
" " " platform, 5 feet	553	52 3 6½	40 9 8¾	26 9 6¼	119 2 9½	131 18 11
" " " " 7 feet	100	9 19 4¾	10 9 6	5 16 10	26 5 8¾	29 2 2¾
" " " " 6 feet	100	9 – 1¾	8 3 5½	4 18 2	22 1 9¼	24 9 2½
" of sorts	2	– 7 11	– 5 7	– 3 10¼	– 17 4¼	– 19 2¾
Limbers, complete, with shafts and wheels, carriages, travelling platform, iron, 13, 9, and 7-inch	17	168 4 10¼	108 5 1¼	79 – –¾	355 10 –¼	393 14 3
Limbers, complete, with shafts and wheels, carriages, transporting platform, wood	6	20 4 10¾	11 11 5	9 1 9¾	40 18 1½	45 6 –¾
Limbers, complete, with shafts and wheels, platform wagon	1	9 9 4¾	9 1 3¼	5 5 11	23 16 7	26 7 9¾
Linstocks, with cocks	105	21 3 –	3 10 –½	7 – 10½	31 13 11	35 2 –¾
Litters, French pattern, prs.	1	5 12 1	1 12 6	2 1 3¾	9 5 10¾	10 5 10½
Locks, spring metal, with keys, plates, &c., 7-pr., M. L. R.	6	– 12 6½	– 5 10	– 5 3	1 3 7½	1 6 2
" " " service pattern	12	– 13 4½	– 13 7¼	– 7 8½	1 14 8¼	1 18 5¼
Loops, dismounting chock	4	– 2 4	– – 8	– – 10¼	– 3 10¼	– 4 3¼
" screw, or lashing	1,100	3 4 4	1 – 4	1 4 2¼	5 8 10¼	6 – 6¾
Magazine, boat service, with fittings	6	4 8 1	3 1 9½	2 2 10¼	9 12 8¾	10 13 5¼
" portable, with trucks	5	15 3 4½	8 19 3¾	6 17 11	31 – 7¼	34 7 3¾
Mallets, sailmakers'	3	– 17 7¾	– 7 10¾	– 7 3½	1 12 10	1 16 5
" tent	9,500	252 11 5¼	187 9 9	125 14 8¾	565 15 11	626 12 3
" picket	200	15 9 9	8 19 9	6 19 10½	31 9 4½	34 17 –¼

No. 1.—Royal Carriage Department, Woolwich Arsenal—(C.) Return of Stores made New, &c.—*continued.*

DESCRIPTION.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Material for a field magazine to hold 44 barrels of powder	1	6 7 5¾	22 15 7½	8 6 7¼	37 9 8½	41 10 3½
„ of sorts	19	7 9 3½	27 8 11½	9 19 6¼	44 17 9¼	49 14 3¼
Mauls, wood, common	401	25 3 4¾	19 16 1	12 17 –	57 16 5¾	64 – 9½
„ iron-hooped	317	41 14 2¾	36 – 2¼	22 4 1¾	99 18 6¾	110 13 4½
„ powder	6	– 3 8¾	– 2 1½	– 1 8	– 7 6¼	– 8 4
„ saltpetre	6	– 2 2½	– 2 3½	– 1 3½	– 5 9½	– 6 5
Models, of sorts	24	187 19 1¼	9 19 4	56 11 –½	254 9 5¾	281 16 6½
Measures, tin, for fitting cylinders, 7-pr. boat carriage	1	– 5 2	– 2 9	– 2 3¼	– 10 2¼	– 11 3¾
Nails, tire, hoop	18	– – 5	– 1 2¼	– – 5¼	– 2 –½	– 2 3¼
Nuts and bolt, universal, for garlands	1	– 1 6¼	– – 2	– – 5¾	– 2 2	– 2 5
„ metal, compressing	20	9 18 8	15 3 1	7 3 4½	32 5 1½	35 14 5¾
„ „ adjusting	14	6 6 8	16 16 7	6 12 4¼	29 15 7¼	32 19 7½
Panniers, rocket, 6-pr., Hale's (Abyssinia)	13	18 18 7	64 7 9½	23 16 1¼	107 2 5¾	118 12 9¼
„ saddler's	50	42 17 1¼	16 15 7¾	17 – 9¾	76 13 6¾	84 18 2½
Pawls, iron gyn, complete	4	– 16 5½	– 7 4	– 6 9½	1 10 7	1 13 10½
„ wood, sling cart	56	2 6 6¾	1 14 9¾	1 3 3	5 4 7½	5 15 10½
Pedestals, wood, for carriage, wood, R. B. L., dwarf, 40-pr.	20	– 9 9¾	1 5 9	– 10 1½	2 5 8¼	2 10 7
„ „ „ „ S.B., common, standing, 4 trucks, 8 inch, or 32-pr.	4	– 3 3¾	– 5 11	– 2 7¾	– 11 10½	– 13 1½
„ „ „ „ S.B., common, standing, 4 trucks, 24 and 18-pr.	146	3 11 10¾	12 11 1	4 12 3½	20 15 3¼	22 19 11
„ „ „ „ S.B., rear chock, 8-in. or 32-pr.	37	1 11 3¼	3 5 1¼	1 7 6½	6 3 11	6 17 2¾
„ „ „ „ S.B., sliding, dwarf, 8-in. or 32-pr.	6	– 5 2¾	– 11 –¼	– 4 7¾	1 – 10¾	1 3 1¾
Pegs, wood, cavalry practice	65,000	27 7 4¼	37 1 6½	18 8 3¼	82 17 2	91 15 3½
Perches, wagon, complete, 8-inch to 6-pr. S.B., also store, small-arm, and forge	6	3 5 –¾	3 1 11¾	1 16 3¾	8 3 4¼	9 – 11¼
Pickets, wood, range 3½ feet	500	6 11 10½	20 1 9½	7 12 5¾	34 6 1¾	37 19 10¾
„ sap roller	20	– 2 –¾	– 5 5½	– 2 1¾	– 9 8	– 10 8¼
Pieces, tail, sling cart	9	1 2 6½	1 15 –¾	– 16 5½	3 14 –¾	4 2 –¼
Pinions, iron, with spindles, R.M.L. gun carriage, W.I., 13-in. or 12-in.	5	3 17 7¼	1 14 2¼	1 11 11¼	7 3 8¾	7 19 2
„ „ „ „ „ 9-in. and 8-in.	61	58 19 4	7 2 4	18 17 7¾	84 19 3¾	94 1 11¾
„ „ „ „ „ 7-in.	189	181 18 3¼	21 9 4	58 2 2¾	261 9 10	289 11 11½
„ „ „ „ „ of sorts	8	7 12 8	– 17 2	2 8 6¼	10 18 4¼	12 1 9¾
„ „ without spindles „ „ 13-in. or 12-in.	1	– 18 –¼	– 2 4	– 5 9¾	1 6 2	1 8 11¾

Pins, iron, ammunition, powder barrow, and 7-pr. M. L. rifled (Abyssinia)	18	– 2 6½	– – 8¾	– – 11¼	– 4 2½	– 4 8½
" " linch, carriages, naval, 18, 12, and 9-pr. iron guns	28	– 13 3½	– 4 –¾	– 4 11½	1 2 3¾	1 4 8½
" " " " travelling, general service	10	– 2 1	– 1 –¾	– – 10¾	– 4 –½	– 4 5¾
" " rods, cleaning	800	– 4 8¼	– 2 2¾	– 1 11¾	– 8 10¾	– 9 10¼
" " roller, with keys	553	6 15 3¾	1 9 –½	2 6 11½	10 11 3¾	11 14 –½
" " of sorts	2	– – 5	– – 2½	– – 2¼	– – 9¾	– – 10¾
Pintails, 12-pr. (A.) gun	15	4 18 11¾	4 10 5½	2 14 1½	12 3 6¾	13 9 9¼
Pivots, iron, with sockets, 7, 9, 12, and 13-inch guns	22	44 9 4¼	21 6 –	18 15 10	84 11 2¼	93 12 11½
Plates, for compressors	2	1 10 5	1 2 4	– 15 –¾	3 7 9¾	3 15 1
" iron, with two fixed pivot heads for wood slides	2	3 7 9½	1 11 –½	1 8 2¾	6 7 –½	7 – 8½
" locking carriage	4	– 1 3	– – 8¾	– – 6¾	– 2 6½	– 2 9¾
" of sorts	4	– 2 –¾	– – 3¾	– – 8	– 3 –½	– 3 4½
Platforms, Alderson's, wood, portable, gun, 18 feet by 10	1	4 3 1	10 15 6¾	4 5 4	19 3 11¾	21 5 3
" " " " " 15 feet by 9	4	16 – 4	42 16 10	16 16 4¼	75 13 6¼	83 16 2¼
" " " " mortar	9	14 18 8¼	39 1 10½	15 8 9	69 9 3¾	76 18 7¾
" ground, with racers	1	7 7 7¼	15 11 7¼	6 11 2½	29 10 5	32 13 10½
" siege (Clerk's), 17 feet long, portable	26	117 4 1¼	234 17 11¼	100 12 1	452 14 1½	501 7 3¾
" casemate, iron, R. M. L. 13 or 12-inch	1	97 2 3	70 18 11¼	48 – 4½	216 1 6¾	239 6 –¾
" " " " 9 or 7-inch	25	1,426 10 8¼	1,447 4 1¼	821 2 2	3,694 16 11½	4,091 19 10¼
" " " " 9 or 7-inch steel girder	1	52 2 4¼	65 13 1½	33 13 –¼	151 8 6	167 14 –¼
" dwarf, iron, R. M. L. 9-inch	4	250 13 8	259 9 7¾	145 15 4¼	655 18 8	726 8 9
" " " 7-inch	31	1,929 17 6¾	2,123 18 11½	1,158 5 9¼	5,212 2 3½	5,772 6 10¾
" " wood, 7-inch B. L. 64 and 40-pr., and 10-inch 68-pr., 8-inch or 32-pr.	15	166 19 9	456 15 5	178 4 6	801 19 8	888 3 8½
" non-recoil, W. I., with water buffers, rifled B. L. 7-inch gun	1	32 2 5¾	27 18 11¼	17 3 3¼	77 4 8¼	85 10 8¾
Pockets, leather, sponge	6	– 3 –	– 17 6	– 5 10	1 6 4	1 9 2
" " tin cup	1	– 1 6	– 2 5	– 1 1½	– 5 –½	– 5 7
" " tube	1	– 1 1	– 2 –¼	– – 10½	– 3 11¾	– 4 5
Poles, leaping	1	– 4 2½	– 1 –½	– 1 6	– 6 9	– 7 5¾
" wagons, ambulance and bread, with chain	12	2 16 2¾	2 9 11½	1 10 4¼	6 16 6½	7 11 2¾
" " break	1	– 15 8	– 5 8½	– 6 1¼	1 7 5¾	1 10 5¼
Pontoon appurtenances, lashings, chess or oar	17	– – 3	– 10 4	– 3 –¼	– 13 7¼	– 15 –¾
Posts, wood, picket, ash, garrison, 8 feet	57	21 8 6¼	33 5 7½	15 12 7½	70 6 9¼	77 17 11¾
" " " " " 6 feet	1	– 2 10	– 2 9¼	– 1 7¼	– 7 2½	– 7 11¾
" " " " " 5 feet	380	37 1 1¼	35 17 9¼	20 16 10¼	93 15 8¾	103 17 4¼
" " of sorts	11	3 3 6	5 1 10¼	2 7 2½	10 12 6¾	11 15 5
Props, of sorts	8	– 2 7	– 19 4½	– 6 3½	1 8 3	1 11 3½
Pinchers, rod, with handles, 7-pr. (Abyssinia)	1	– – 10½	– – 4	– – 4¼	– 1 6¾	– 1 8¾
Racers, iron, raised, heavy, 2¼-inch	89	184 11 6½	332 6 9½	147 13 11½	664 12 3½	736 1 –¼
" " of sorts	1	2 11 2½	2 10 11	1 9 2¼	6 11 3¾	7 5 5
Racksticks, with lashings	44	– 10 3	1 8 11½	– 11 2½	2 10 5	2 15 10
Rafts, for floating target, 9 feet	8	19 11 –¼	36 6 –	15 19 2	71 16 2¼	79 10 6¾

No. 1.—Royal Carriage Department, Woolwich Arsenal—(C.) Return of Stores made New, &c.—*continued.*

DESCRIPTION.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure.	TOTAL COST, per Balance Sheet, No. 1.	TOTAL COST, per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Rammers, gun, R. B. L., 64-pr.	100	3 12 8	4 6 4½	2 5 5	10 4 5½	11 6 5
" " R. M. L., 13-inch	6	1 11 5¾	2 7 10¾	1 2 8¼	5 2 -¾	5 13 -½
" " " 12-inch	13	3 2 7	4 18 5¾	2 6 -¼	10 7 1	11 9 4¼
" " " 9-inch	312	31 18 -¼	98 4 7	37 3 7¼	167 6 2½	185 5 10½
" " " 8-inch	166	15 9 5¾	60 9 -½	21 13 10½	97 12 4¾	108 2 3
" " " 7-inch	254	26 10 5¾	65 6 2¾	26 4 9½	118 1 6	130 15 4
" " " 64-pr.	352	7 19 2	51 18 4¼	17 2 2	76 19 8¼	85 5 2¼
" " " 56-pr. Palliser gun	1	- - 8½	- 2 11	- 1 -¼	- 4 7¾	- 5 1½
" " S. B., 32-pr.	26	- 12 7¼	2 12 11	- 18 8¾	4 4 3	4 13 3¾
" " " 6-pr.	26	- 7 6	3 14 2¼	1 3 4	5 5 -¼	5 16 4
" " of rock, elm staves, 13-inch	1	- 5 9¼	- 7 8¾	- 3 10¾	- 17 4¾	- 19 3
" " " " 11-inch	1	- 5 6¼	- 6 3¾	- 3 4¾	- 15 2¾	- 16 10¼
" " " " 10-inch	1	- 4 3¾	- 4 8	- 2 6½	- 11 6¼	- 12 9
" " " " 9-inch	1	- 3 5¾	- 4 -¼	- 2 1½	- 9 7½	- 10 8
" " " " 8-inch	1	- 4 -½	- 3 8½	- 2 2¾	- 9 11¾	- 11 -½
" " " " 7-inch	1	- 3 10½	- 3 -½	- 1 11¾	- 8 10¾	- 9 10
Reel, hose, with cover	1	6 1 7¾	4 16 8¾	3 2 4¾	14 - 9¼	15 10 11¼
Rings, copper, for springe stave, 9-pr.	1	- - 3½	- - -¼	- - 1	- - 4¾	- - 5¼
" iron, lasso surcingle, 3-inch	69	- 5 9¾	- 3 3	- 2 7	- 11 7¾	- 12 11
" " trunnion, 24-pr. howitzer	1	- 4 2	- - 5	- 1 3¾	- 5 10¾	- 6 6¼
" " of sorts	22	- 17 11½	- 6 5¼	- 6 11½	1 11 4¼	1 14 8½
" wood, for parbuckling 23-ton gun	1	23 1 3¾	30 11 3	15 6 5½	68 19 -¼	76 7 3¼
Rivets, iron, packsaddle, 7-pr. M. L. R. (Abyssinia)	40	- - 6	- - 4	- - 2¾	- 1 -¾	- 1 2
" " of sorts	42	- - 11½	- 1 -½	- - 7	- 2 7	- 2 10¼
Rods, cleaning, gun, 64-pr. B. L.	99	5 17 1¾	19 5 10¼	7 3 8½	32 6 8½	35 16 2¾
" " " 12-pr.	84	9 10 8¼	17 12 11½	7 15 4¼	34 19 -	38 14 1¾
" " " 9-pr.	12	1 10 1	2 9 3¼	1 2 8¼	5 2 -½	5 13 -¼
Rollers, metal, rifled M. L. guns, iron carriages, 8-inch and 9-inch, turret, front	5	2 6 8	29 17 7	9 4 1	41 8 4	45 17 4½
" " " " 8-inch and 9-inch, turret, rear	14	5 13 9	33 3 1	11 1 11½	49 18 9½	55 6 1¾
" " " " 7-inch, front	50	12 5 10	133 15 4	41 14 7¾	187 15 9¾	207 19 6¼
" " " " 7-inch, rear	51	11 5 8	61 17 1	20 17 11½	94 - 8½	104 2 10¼
" " " iron slide, centre, 8-inch or 9-inch	6	2 6 3½	14 14 3	4 17 3½	21 17 10	24 4 10¾
" " " " - 7-inch	56	13 15 9	137 4 5¾	43 2 11½	194 3 2¼	215 - 7¼
" " " " front, 8-inch or 9-inch	11	6 6 8	42 12 5	13 19 9	62 18 10	69 14 1¾
" " " " - 7-inch	55	15 18 6	121 - 5	39 2 7	176 1 6	195 2 -

Rollers, metal, rifled M. L. guns, iron slide, rear, 8-inch or 9-inch	14	8 1 11½	88 4 11	27 10 6¾	123 17 5¼	137 3 8¾
" " " " " 7-inch	52	14 2 3	135 4 9½	42 13 5¾	192 – 6¼	212 13 4¼
" " wood carriages, front, 68-pr., 7-inch B. L., 10-inch, and 8-inch 64-pr., 40-pr., and 32-pr.	1	– 3 11	1 – 9	– 7 –¾	1 11 8¾	1 15 1¾
" " " rear, ditto, ditto	14	– 14 3	4 4 1	1 8 1¼	6 6 5¼	7 – –¼
" wood, running up with metal work, for 10-inch R. chock carriages	30	19 – 8½	69 1 5¾	25 3 6¼	113 5 8½	125 9 3
" " elm, 8-feet by 10-inch	6	1 18 1½	3 4 7	1 9 4¼	6 12 –¾	7 6 3
" " " 6-feet by 8-inch	9	1 8 8½	2 6 6	1 1 5¾	4 16 8¼	5 7 1¼
" " " 6-feet by 10-inch	45	10 19 11¼	18 5 11¼	8 7 4¼	37 13 2¾	41 14 2¼
" " " 6-feet by 6-inch	36	3 19 8½	5 5 8¼	2 12 11¾	11 18 4½	13 2 –
" " " 4-feet by 10-inch	51	9 5 6	13 17 8¾	6 12 4¼	29 15 7	32 19 7¼
" " " 4-feet by 7½-inch	102	11 1 10¼	16 2 4¾	7 15 6	34 19 9	38 14 11¼
" " " 3-feet by 7½-inch	55	4 16 4	6 12 3	3 5 3¾	14 13 10¾	16 5 5¾
" " " 3-feet by 5-inch, and sabicu	80	3 1 8¾	10 4 8	3 16 1½	17 2 6¼	18 19 4¼
" " " 20-inch by 5-inch	63	1 10 11	6 18 7¼	2 8 5¼	10 17 11½	12 1 4½
" " " 14-inch by 5-inch	43	– 14 10¾	3 6 2½	1 3 2	5 4 3¼	5 15 5½
" " " 5-inch by 8-inch, iron bound	6	1 8 1	1 17 10¾	– 18 10¼	4 4 10	4 13 11¼
" " " 2-inch by 8-inch	28	1 9 2½	2 8 2½	1 2 1½	4 19 6½	5 10 2¾
" " sabicu, 2½ by 5	42	1 12 6	6 18 7¼	2 8 10¾	11 – –	12 3 7¾
" " " 2 by 5	61	1 16 7¾	8 1 –¼	2 16 5¾	12 14 1¾	14 1 5½
" " handspike	40	2 13 –	5 2 11¾	2 4 6¾	10 – 6½	11 2 1
Ropes, drag, heavy, pairs	253	26 – 7¾	133 16 8¾	45 13 7	205 10 11½	227 12 10
" " light, pairs	1,137	72 18 5	231 14 10	87 1 –	391 14 3	433 16 3½
" " or trace, 7-pr. M. L. R. (Abyssinia)	26	3 10 4	1 6 4¼	1 7 7	6 4 3¼	6 17 7½
" collar shanks, for harness	500	1 11 3	18 9 7¾	5 14 6½	25 15 5¼	28 10 10
" parbuckling, 12 fathoms	32	5 1 –¾	35 7 9½	11 11 1½	51 19 11¾	57 11 9
" preventor, of sorts	147	6 5 4¾	52 16 –¼	16 17 6¾	75 18 11¾	84 2 4
" grummets, with staples for floating targets	2	– 1 2¼	– 3 10½	– 1 5¼	– 6 6	– 7 2¼
Saddles, pack, without pannels, gun, 7-pr., brass	28	35 14 4	17 12 10½	15 4 11	68 12 1½	75 19 7¼
" " gun, 7-pr. M. L. R., mountain artillery	28	105 15 7	61 11 1	47 16 2¾	215 2 10¾	238 5 4¾
" " of sorts	1	12 16 –	2 9 9	4 7 4½	19 13 1½	21 15 4½
Scotches, wood, large	200	2 – 7½	4 16 10½	1 19 3½	8 16 9½	9 15 9¼
" " medium	892	3 15 10¾	9 1 –	3 13 4¾	16 10 3½	18 5 9½
" " small	1,324	4 15 4¾	11 7 6½	4 12 3¼	20 15 2½	22 19 10¼
Screens	9	2 8 9¼	3 16 6	1 15 9½	8 1 –¾	8 18 4½
Screws, with nuts and collar, adjusting, W. I. carriages, 9-inch	39	81 2 –	78 9 3¼	45 11 10¾	205 3 2	227 4 2½
" " " " 8-in. or 7-in.	52	104 12 2¼	100 13 1¾	58 13 –¼	263 18 4½	292 5 8½
" " compressing " 9-inch	28	35 6 6¾	39 1 7¼	21 5 2½	95 13 4½	105 19 –½
" " " " 7-in. or 8-in.	56	75 3 3½	85 14 1	45 19 3¼	206 16 7½	229 1 3
" compressors, of sorts	9	3 16 4¼	4 16 5½	2 9 4½	11 2 2¼	12 6 –¾
" connecting	1	– 4 9	– 5 –	– 2 9½	– 12 6½	– 13 10¾

No. 1.—Royal Carriage Department, Woolwich Arsenal—(C.) Return of Stores made New, &c.—*continued.*

DESCRIPTION.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure.	TOTAL COST, per Balance Sheet, No. 1.	TOTAL COST, per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Screws, elevating, mountain, 7-pr.	1	– 12 5	– 5 5	– 5 1¼	1 2 11¼	1 5 4¾
" " naval, with nuts, 7-inch B. L. 64-pr. M. L.	28	12 3 1	86 4 9	28 2 3¼	126 10 1¼	140 2 –½
" jamming boat, rifled, 20 or 24-pr. howitzer	39	43 11 –	21 5 –½	18 10 3¾	83 6 4¼	92 5 5½
" " 12-pr. or 9-pr., or 12-pr. howitzer	7	1 8 1¾	1 1 10½	– 14 3½	3 4 3¾	3 11 2¾
Scuppets, hollow	12	1 10 10	– 5 –	– 10 2¾	2 6 –¾	2 11 –¼
Sections, wood, gun, vertical M. L. R., 7-inch	1	2 8 –¾	2 9 10	1 7 11¾	6 5 10½	6 19 4¾
" " of rear end of platform for 12-ton gun	1	3 16 4½	– 3 11¾	1 2 11½	5 3 3¾	5 14 5
Shackles, iron, gyn	1	– 14 9¼	– 13 8½	– 8 1¾	1 16 7½	2 – 6¾
" " spring, for bread wagon	12	– 15 6¼	– 7 5¼	– 6 6¾	1 9 6¼	1 12 8¼
" " targets, floating	3	– 8 8	– 2 2½	– 3 1¼	– 13 11¾	– 15 5¾
Shafts, cart, coal, common or fatigue, framed	12	1 – 2¾	4 4 9	1 9 11¾	6 14 11½	7 9 5½
" field and store, near and off, complete, N. P. pairs	1	1 2 11½	1 1 –¼	– 12 6¾	2 16 6½	3 2 7½
" " " " O. P. "	1	– 11 3½	– 12 4½	– 6 9	1 10 5	1 13 8¼
" " " rough	24	1 8 10¼	6 1 –¾	2 2 10¼	9 12 9¼	10 13 6
" of sorts	44	8 4 5½	9 16 8	5 3 2¼	23 4 3¾	25 14 2¾
" mountain, 7-pr. gun, Abyssinia	26	11 4 11¾	3 12 8¾	4 5 –¾	19 2 9¼	21 3 11
" " " India	6	4 15 11	2 4 5¼	2 – 1	9 – 5¼	9 19 10
" wagons, G. S., framed pairs	42	26 7 7	18 6 2¼	12 15 4½	57 9 1¾	63 12 8
" " " near and off	55	2 16 6½	11 16 9½	4 3 9¾	18 17 1¾	20 17 8¼
" " platform, framed, and sling wagon	1	1 1 –½	– 11 2½	– 9 2½	2 1 5½	2 5 11
" " of sorts	1	– 1 –¼	– 4 3¾	– 1 6¼	– 6 10¼	– 7 7
Shears, single, 30 feet	2	1 1 4¼	10 5 3¼	3 4 9	14 11 4½	16 2 8¼
Sheaves, brass, 2½-inch	3	– 1 6¼	– 1 –	– – 8¾	– 3 3	– 3 7½
" " 3-inch	3	– 1 6¾	– 1 2	– – 9½	– 3 6¼	– 3 10¾
" metal, of sorts	5	– 6 5½	1 – 9	– 7 9¾	1 15 –¼	1 18 9¾
Shoes, drag, iron, carriage, field, 12-pr. or 9 pr.	36	16 1 9½	18 4 6¼	9 16 1	44 2 4¾	48 17 3
" " " wagon, ambulance and G. S., with chains	54	19 7 3½	20 6 2¾	11 6 8¾	51 – 3	56 9 11
" " " " Flanders, with chains	16	6 5 4½	6 16 8	3 14 10½	16 16 10¾	18 13 1¼
" " " " platform	12	3 1 7½	2 12 8	1 12 8	7 6 11½	8 2 9
" " " " of sorts	62	17 3 2¼	14 18 10¾	9 3 5½	41 5 6½	45 14 3¼
" wood, of sorts	14	7 12 –¼	15 19 7¾	6 14 9	30 6 5	33 11 7¼
Sides, barrow	50	– 7 7¾	– 18 3	– 7 4¾	1 13 3½	1 16 10½
Skids, wood, fir, with grummets, 20 ft. long by 15 in. square	10	16 1 9	45 6 7¾	17 10 11¾	78 19 4½	87 9 1½
" " " 20 ft. " by 9 in. "	4	1 16 6	6 10 5½	2 7 8½	10 14 8	11 17 8¾
" " " 14 ft. " by 9 in. "	12	3 7 3¼	13 7 8¾	4 15 8½	21 10 8½	23 17 –
" " " 14 ft. " by 7 in. "	2	– 8 1	1 8 9	– 10 6¼	2 7 4¼	2 12 5¼

Skids, wood, oak, with rope handles, 14 feet long by 5 inch square	8	2 11 6¼	11 2 2	3 18 2	17 11 10¼	19 9 8
" " " 5 feet long by 6 inch by 5 inch	2	– 2 1½	– 10 9¼	– 3 8	– 16 6¾	– 18 4¼
" " " 3½ feet long by 4 inch square	10	– 6 –½	1 – 8¾	– 7 7¾	1 14 5	1 18 1½
" " " 3 feet long by 9 inch by 6 inch	42	2 7 7	12 5 6	4 3 8¾	18 16 9¾	20 17 3¾
" " " 3 feet long by 9 inch by 3 inch	4	– 3 –½	– 14 4	– 4 11½	1 2 4	1 4 8¾
" " " 3 feet long by 6 inch square	4	– 3 7¾	– 15 7	– 5 5¾	1 4 8½	1 7 4¼
" " " 3 feet long by 6 inch by 3 inch	10	– 5 6½	1 – 3¼	– 7 4½	1 13 2¼	1 16 9
" " " 3 feet long by 3 inch square	20	– 7 7½	1 2 8½	– 8 8	1 19 –	2 3 2¼
" mounting and dismounting 40-pr. guns	9	3 4 10	16 – 10	5 10 2¼	24 15 10¼	27 9 1¾
Skidding, wood, fir, with rope grummets, various	30	12 17 3¼	48 19 2¾	17 13 3½	79 9 9½	88 – 8
" oak, with rope handles, various	108	3 16 10½	15 19 –¼	5 13 1¼	25 9 –	28 3 8½
Sleighs, for removing guns, 23-ton	3	61 1 6½	155 5 11¾	61 16 6¾	278 4 1	308 2 2
Slides, W. I. M. L. R., 9-inch	13	709 9 11¾	1,102 9 10¾	517 14 8½	2,329 14 7	2,580 2 10¼
" " 8-inch	33	1,672 15 5¾	2,691 9 9¼	1,246 19 9	5,611 5 –	6,214 7 7¾
" " 7-inch	206	9,917 5 1¾	12,586 – 6	6,429 15 10¾	28,933 1 6½	32,042 19 8
" wood, S. S., boat, 20-pr. and 12-pr. R.	50	217 17 11½	214 2 6	123 8 9¾	555 9 3¼	615 3 4½
" " 9-pr., rifled	20	84 2 1½	82 16 1¼	47 13 10	214 12 –¾	237 13 4¾
" " M. L. R. gun, 7-pr.	1	16 14 11¾	5 11 7	6 7 7¼	28 14 2	31 15 10½
Slings, white rope, gun, 6-inch by 12 feet	20	– 13 4	18 10 1½	5 9 6¾	24 13 –¼	27 6 –
" " " 6-inch by 30 feet (68-pr.)	1	– – 11	– 18 6	– 5 6¾	1 4 11¾	1 7 8
" 2½-inch rope, tarred, superstructure barrel, pier	8	– 1 4	3 16 –	1 2 1¼	4 19 5¼	5 10 1½
" of sorts	1	– 1 –	– 17 5¾	– 5 3½	1 3 9¼	1 6 4
Sockets, lever, without toe	134	54 5 11	5 19 11½	17 4 6¾	77 10 5¼	85 17 1
" with toe	208	77 17 5¼	9 3 –½	24 17 3¾	111 17 9½	123 18 4
" of sorts	20	6 19 9	4 15 2½	3 7 1½	15 2 1	16 14 6½
Soles, steel, for drag shoes, 20, 12 or 9-pr.	93	5 10 5¾	9 13 11	4 6 11¾	19 11 4½	21 13 5¼
Spare articles for wagon, pontoon, heavy	1	19 9 –	33 10 4	15 2 8¼	68 2 –¼	75 8 5
Spars, for shears, 60 feet from P. S. S., fitted with iron bands	2	26 17 8	3 18 6¾	8 16 1¼	39 12 4	43 17 6
" " of lengths	27	16 1 8¾	147 14 4½	46 16 1	210 12 2¼	233 4 11¼
" of sorts	2	– 2 1	– 12 6	– 4 2	– 18 9	1 – 9¼
Specimens, wood (sets)	8	1 13 11	– 11 2	– 12 10¾	2 17 11¾	3 4 2½
Spindles for pinion, Colonel Shaw's carriage	1	– 12 2¾	– 1 4¾	– 3 10¾	– 17 6¼	– 19 4¾
Sponges, with caps, with rope, staves, and rammer heads, S. S. R., M. L., 8-inch	14	3 17 10½	17 10 8¾	6 2 5½	27 11 –¾	30 10 3¼
" " with wood staves, B. L., 64-pr.	140	9 17 10¾	65 18 4½	21 13 3	97 9 6¼	107 19 –¾
" " " " " 20-pr.	30	4 16 2¾	11 – 6½	4 10 6	20 7 3¼	22 11 –¾
" " " " " 12-pr.	76	8 11 –½	21 – 10½	8 9 1½	38 1 –½	42 2 10¼
" " " " gun, M. L. R., 13-inch	6	1 8 9¼	7 7 9	2 10 5¼	11 6 11½	12 11 4¼

No. 1.—Royal Carriage Department, Woolwich Arsenal—(C.) Return of Stores made New, &c.—*continued.*

DESCRIPTION.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Sponges, with caps, with wood staves, gun, M. L. R., 12-inch -	14	2 16 2	16 10 9½	5 10 6¾	24 17 6¼	27 11 –
" " " " " " 9-inch -	266	30 – –¼	206 2 2½	67 9 2½	303 11 5¼	336 4 –½
" " " " " " 8-inch -	134	12 13 11¾	96 17 10½	31 6 3¼	140 18 1½	156 1 –½
" " " " " " 7-inch, 7-ton	4	– 8 1¾	1 17 8	– 13 1	2 18 10¾	3 5 2¾
" " " " " " 7-inch, 6½-ton	305	27 5 9¾	166 16 –¾	55 9 2	249 11 –½	276 7 6¼
" " " " " " 5·3-inch -	3	– 3 10¼	– 11 10¼	– 4 6	1 – 2½	1 2 4½
" " " " " " 64-pr. -	377	30 – 5	188 14 9¼	62 10 1½	281 5 3¾	311 9 11½
" " " " " " 7-pr., India -	24	1 4 6½	1 17 11¾	– 17 10½	4 – 4¾	4 9 –½
" " " " S. B., land, bronze, 9-pr. -	100	7 7 5	16 3 6½	6 14 6¾	30 5 6¼	33 10 7¼
" " " " " " 3-pr. -	2	– 2 8	– 5 6	– 2 4	– 10 6	– 11 7½
" with caps, S. B., with wood staves, 8-inch - - -	98	9 3 8	53 6 9¾	17 17 3½	80 7 9¼	89 – 7
" " " " " " 150-pr. - - -	11	1 17 6½	9 9 4	3 4 10	14 11 8½	16 3 –¾
" " " " " " 100-pr. - - -	30	4 10 9¾	15 3 9½	5 12 9	25 7 4¼	28 1 10¾
" " " " " " 32-pr. - - -	26	2 6 5	8 6 10½	3 – 11½	13 14 3	15 3 9
" " " " " " 9-pr. - - -	34	1 13 6¾	9 11 3¼	3 4 3	14 9 1	16 – 2
" " " " " " 6-pr., bronze - -	142	13 – 2½	19 6 2	9 4 8¼	41 11 –¾	46 – 4¾
" " " " " " 6-pr., iron - -	36	1 15 7¾	9 5 2¼	3 3 1¼	14 3 11¼	15 14 5¼
" without caps, gun, R. M. L., 56-pr. (Palliser's) - -	1	– 1 1½	– 9 8½	– 3 1¼	– 13 11¼	– 15 5¼
" with wood staves without caps, R. M. L., 12-pr. - -	2	– 4 1¼	– 7 1½	– 3 2½	– 14 5¼	– 16 –
" " " " " 6·3 or 64-pr. -	5	– 5 11½	2 7 9¼	– 15 4¼	3 9 –¾	3 16 5¾
" " " " " 9-inch - -	2	– 3 5¼	1 13 4¾	– 10 6¼	2 7 4¼	2 12 5¼
" " " " " 7-pr. (Abyssinia)	1	– 1 10½	– 2 2	– 1 2	– 5 2½	– 5 9¼
" " " " S. B., land, bronze, 6-pr. -	50	3 12 11¼	6 15 3¼	2 19 6	13 7 8½	14 16 5¾
" " " " " howitzer, bronze, 12-pr. - -	12	– 9 11	1 19 4	– 14 –¾	3 3 3¾	3 10 1½
" " " " " mortar, 8-inch -	24	2 – 6½	11 3 4¼	3 15 4¾	16 19 3½	18 15 9¼
" rock elm staves, 15-inch Rodman - - - - - -	1	– 5 2½	1 8 7	– 9 7¾	2 3 5	2 8 1
" " " 13-inch M. L. R. - - - - - -	1	– 5 10½	1 4 8¾	– 8 8¾	1 19 4	2 3 6¾
" " " 12-inch " - - - - - -	1	– 3 10½	1 2 3¼	– 7 5½	1 13 7¼	1 17 2½
" " " 11-inch " - - - - - -	1	– 5 3¾	– 19 5¾	– 7 –¾	1 11 10¼	1 15 3¼
" " " 10-inch " - - - - - -	1	– 3 8	– 17 2¾	– 5 11½	1 6 10¼	1 9 8¾
" " " 7-pr. " - - - - - -	25	2 16 6¾	3 2 11¾	1 14 1¾	7 13 8¼	8 10 2¼
" of sorts - - - - - - - - - - -	6	– 10 7¾	– 16 2¼	– 7 7¾	1 14 5¾	1 18 2¼
Springs, india rubber, flanders wagon - - - - - - -	52	18 7 7¾	24 8 7	12 4 7¾	55 – 10½	60 19 2½
" for bread wagon - - - - - - - - -	28	4 12 3¼	12 10 10	4 18 –¼	22 1 1½	24 8 6½
Stakes, gabion - - - - - - - - - - -	2,000	3 3 10½	7 8 5¼	3 – 8	13 12 11¾	15 2 3¾
Standard iron for measuring recruits - - - - - - -	1	1 7 –	– 9 9¼	– 10 6¾	2 7 4	2 12 5
Stand, thermometer - - - - - - - - - -	1	1 10 1	2 4 –	1 1 2	4 15 3	5 5 6
Staples of sorts - - - - - - - - - - -	55	1 3 6¼	– 16 5½	– 11 5	2 11 4¾	2 16 11

Staves, constables	2,338	39 7 5¼	23 16 –¾	18 1 –¼	81 4 6¼	89 19 1¾
" flag, floating target	40	7 12 8½	4 18 2¾	3 11 8¼	16 2 8	17 17 4
" " 30-feet	2	1 2 7¼	– 19 2¾	– 11 11¼	2 13 9¼	2 19 6¾
" lance	733	17 3 8	123 2 5	40 1 9¾	180 7 10¾	199 15 8¼
" sponge, tapered, 13-feet	3	– 3 11¾	– 5 11	– 2 9¾	– 12 8½	– 14 1
" " " 12-feet	126	1 2 7	27 16 9¾	8 5 6¾	37 4 11½	41 5 –¼
" " " 11-feet	100	– 3 2½	19 11 8	5 12 9¼	25 7 7¾	28 2 2½
" " of sorts	42	1 13 2½	2 8 11¼	1 3 5½	5 5 7¼	5 16 11½
Stays, for rail	4	– 9 3¾	– 11 8	– 5 11½	1 6 11¼	1 9 10
Steamer, for boiler, W. D., sloop (Alma)	1	– 3 9	– 5 4¼	– 2 7¼	– 11 8½	– 12 11½
Sticks, wad	3,300	5 15 9	14 7 11	5 15 4½	25 19 –½	28 14 10
Stocks, for wheels, in the rough, F. S., heavy	4	– 4 9	1 16 3	– 11 8¾	2 12 8¾	2 18 4¾
" " " G. S. or 6-pr., naval	22	1 – 4	2 17 2	1 2 1¼	4 19 7¼	5 10 3¾
" " " naval, 12-pr. howitzer	4	– 4 4	1 2 –	– 7 6¼	1 13 10¼	1 17 6
Stops, for front eccentric rollers, for iron slides, 7-inch	60	3 7 4½	1 18 11½	1 10 4½	6 16 8½	7 11 4¾
" " " 8-inch	30	1 2 4	– 17 8	– 11 5¼	2 11 5¼	2 16 11½
" " " 9-inch	10	– 11 2	– 8 10	– 5 8½	1 5 8½	1 8 5¾
Straps, leather, brown, for tents	6,000	2 4 10½	33 14 3	10 5 5½	46 4 7	51 3 11½
" " lifting projectiles, 7-pr.	720	2 11 8	3 – 9	1 12 1½	7 4 6½	8 – 1
" " travelling carriage	9	3 7 9	9 13 8¾	3 14 8½	16 16 2¼	18 12 4
" " bearing shaft, M. L. R., 7-pr. (Abyssinia)	56	– 7 –	2 13 3	– 17 2¾	3 17 5¾	4 5 9¾
" " " trace, M. L. R., 7-pr. (Abyssinia)	56	– 4 8	– 16 8	– 6 1¼	1 7 5¼	1 10 4½
" " for boxes, to attach to saddles, M. L. R., 7-pr. (Abyssinia)	76	1 18 –	5 7 7	2 1 7¼	9 7 2¼	10 7 3¾
" " " hand, 1¼-inch, M.L.R., 7-pr. (Abyssinia)	180	3 5 4	8 15 2	3 8 8½	15 9 2½	17 2 5¼
" " " " ⅞-inch, M. L. R., 7-pr. (Abyssinia)	28	– 2 4	– 5 –	– 2 1¼	– 9 5¼	– 10 5½
" " connecting carriage, 7-pr., M. L. R. (Abyssinia)	12	– 6 –	– 11 8	– 5 –½	1 2 8½	1 5 1¾
" " side arms, &c., attached to saddles, M. L. R., 7-pr. (Abyssinia)	196	– 16 4	3 10 2	1 4 8½	5 11 2½	6 3 2
" " of sorts	863	6 3 8¾	25 12 1¼	9 1 8¼	40 17 6¼	45 5 4¾
Summer ammunition wagon, body, 12-pr.	1	– – 8½	– 3 1	– 1 1	– 4 10½	– 5 4¾
Superstructure for barrel pier raft	5	59 19 3¼	144 2 6¾	58 6 3½	262 8 1½	290 12 2¾
" for trestles	2	11 3 9½	9 6 2	5 17 1¾	26 7 1¼	29 3 9¼
Swingletrees, naval	20	5 5 1¾	2 7 –	2 3 5½	9 15 7¼	10 16 7½
" 9 or 12-pr.	280	57 2 5¾	13 14 11½	20 5 –	91 2 5¼	100 18 4
" spring	40	17 3 7	5 – 1¼	6 6 11¾	28 10 8	31 12 –
Tackles, luff, 2½-inch rope, with 8-inch double and treble Bothway's block	1	1 2 2½	1 12 7	– 15 7¾	3 10 5¼	3 18 –¼
" magazine, 8-inch blocks	1	1 11 5¾	2 – 11	1 – 8¼	4 13 1	5 3 1¼

No. 1.—Royal Carriage Department, Woolwich Arsenal—(C.) Return of Stores made New, &c.—*continued.*

DESCRIPTION.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Tampeons, wood, gun, R. B. L., 64-pr.	80	6 4 2¼	9 11 8½	4 10 3	20 6 1¾	22 9 9½
" " " " 20-pr.	20	– 14 6	1 6 6½	– 11 8¾	2 12 9¼	2 18 5¼
" " " R. M. L., 13-inch	6	1 16 9¾	1 14 1¼	1 – 3	4 11 2	5 – 11½
" " " " 12-inch	9	2 3 2¾	2 1 –	1 4 –¾	5 8 3½	5 19 11¼
" " " " 10-inch	1	– 5 1	– 5 4½	– 2 11½	– 13 5	– 14 10¼
" " " " 9-inch	248	44 7 –¼	41 12 8	24 11 4¼	110 11 –½	122 8 8¼
" " " " 8-inch	132	21 12 –	20 18 1	12 2 10¾	54 12 11¾	60 10 5½
" " " " 7-inch	303	39 16 6¾	40 8 2	22 18 6¼	103 3 3	114 5 –
" " " " 64-pr.	395	50 5 1½	49 8 11¼	28 9 7¾	128 3 8½	141 19 3¼
" " " S. B., naval, with rings, 32-pr.	40	1 9 5¾	1 4 4½	– 15 4¼	3 9 2½	3 16 7¾
" " " " " " 12-pr.	16	– 10 10	– 18 3½	– 8 3¾	1 17 5¼	2 1 5½
" " mortar, 8-inch	6	– 6 5½	– 9 6¾	– 4 6¾	1 – 7	1 2 9½
" " of sorts	2	– 6 –	– 10 11¾	– 4 10½	1 1 10	1 4 2¼
Targets, with props, deal, 12 ft. × 8 ft. × 2 in.	6	3 14 1¼	8 6 1½	3 8 7½	15 8 10¼	17 2 –½
" " " 9 ft. " 9 ft. " 2 in.	599	367 8 8¾	819 14 6¾	339 4 1¼	1,526 7 4¾	1,690 8 8
" " " 6 ft. " 6 ft. " 2 in.	154	43 4 9¾	96 10 5¼	39 18 8¼	179 13 11¼	199 – 3
" floating, complete, "Shuttleworth's," without shells	21	51 11 1½	59 1 4¾	31 12 2	142 4 8	157 10 5¼
Timber, in the rough, for carriages, S. S. R. C., 24-pr. howitzer, or 20-pr. B. L.	4	2 3 8½	8 8 9	3 – 8½	13 13 2	15 2 6
Tins, grease, half round	14	– 8 2	– 5 10	– 4 –	– 18 –	– 19 11¼
Ties, leather, for linch pins	200	– 2 9	– 2 9	– 1 6¾	– 7 –¾	– 7 10
Tools, for portable forges, 7-pr. battery	15	1 2 8¼	– 5 6¼	– 8 –¾	1 16 3¼	2 – 2
Trail wood, 12-pr., rough	1	– 5 9¾	2 3 8¼	– 14 1¾	3 3 7¾	3 10 5¾
Transoms, for garrison carriages, rough	40	3 9 11¼	38 9 5	11 19 10	53 19 2¼	59 15 2
Trestles, Belgian, 3-legged pairs	2	10 14 1¾	8 5 10¼	5 8 7	24 8 7	27 1 1¼
" " 2-legged "	1	6 – 9	3 – 8½	2 11 10¼	11 13 3¾	12 18 4¾
Trippers, steel	60	13 17 11½	7 18 2	6 4 7¼	28 – 8¾	31 1 –¼
Troughs, iron, for firing "Hales'" rocket	1	3 1 8	– 16 3¾	1 2 3½	5 – 3¼	5 11 –½

Trucks, C. iron, railway trucks	4	2 4 7¼	3 13 8	1 13 9½	7 12 -¾	8 8 4¾
" " carriage drug, large service	18	4 14 11¼	6 1 8	3 1 10¾	13 18 6	15 8 5¼
" " " " West India	18	2 12 7½	2 6 11½	1 8 5½	6 8 -½	7 1 9½
" W. I. platform, hollow, soled, 13-inch	15	7 13 9¼	19 7 1½	7 14 6¾	34 15 5½	38 10 2¾
" miners	2	3 10 8¼	1 12 1¾	1 9 4½	6 12 2½	7 6 5
" railway, ammunition	4	83 6 7½	71 15 10¼	44 6 5½	199 8 11¼	220 17 7
" " water	1	10 7 6½	7 19 10¾	5 4 11¾	23 12 5	26 3 2¼
" " 25-tons	4	73 14 1¼	96 19 11¼	48 15 5¾	219 9 6¼	243 1 4
" " 15-tons	2	35 15 4¼	48 17 1¼	24 3 7	108 16 -½	120 9 11
" " 7-tons	6	97 9 9¾	111 15 4½	59 15 9¾	269 1 -	297 19 4¾
" storehouse, 2-wheel	6	6 13 5¾	3 8 5	2 17 8¼	12 19 7	14 7 5¾
" wood, 7-in. B. L., 68-pr., or 10-inch rear chock, and 64-pr. fore	7	1 4 9½	1 7 5¼	- 14 11	3 7 1¾	3 14 6½
" " 8-inch or 32-pr., 64-pr. 8-inch, or 32-pr. hind	1	- 3 2	- 3 2	- 1 9¾	- 8 1¾	- 9 -¼
" " 24-pr. or 12-pr. howitzer, and 20, 12, and 9-pr. rifled	2	- 2 7½	- 1 11	- 1 2½	- 5 10	- 6 5½
" " 6-pr. S. B. elevating	1	- 1 -¾	- - 9	- - 6¼	- 2 4	- 2 7
" " gyn light	2	- 6 8½	- 7 7	- 4 1	- 18 4½	1 - 4
" " transporting metal bushes	438	244 11 5¼	523 18 11¾	219 11 9	988 2 2	1,094 6 3¾
Tugs, hide	77	- 8 -	- 14 7½	- 6 5¾	1 9 1¼	1 12 2¾
Tumblers, main gaff	1	- 6 1	- 4 -	- 2 10½	- 12 11½	- 14 4¼
Wadhooks, rifled M. L. 13-inch or 12-inch	6	2 - 9	- 17 3¾	- 16 7	3 14 7¾	4 2 8
" " 9-inch	132	11 10 9½	31 2 8¼	12 3 10½	54 17 4¼	60 15 3¾
" " 8-inch	120	8 18 -	21 3 2½	8 11 8¼	38 12 10¾	42 15 11¾
" " 7-inch, 7-tons	15	- 9 10¼	3 19 10¼	1 5 7½	5 15 4	6 7 8¾
" " 7-inch, 6½-tons	80	4 3 6	17 8 -½	6 3 3½	27 14 10	30 14 5½
" " 64 pr.	24	- 8 7	4 18 5¼	1 10 7	6 17 7¼	7 12 4¾
" " 56-pr. (Palliser's)	1	- - 4¾	- 3 11	- 1 4	- 5 7¾	- 6 3½
" " 12-pr.	1	- - 10	- 2 1¼	- - 10	- 3 9¼	- 4 2
" S. B. gun, F. S. with scraper, 6 pr.	20	- 5 11	1 5 8½	- 9 -½	2 - 8	2 5 -½
" 3-pr. or 7-pr. India, and 12-pr. howitzer	35	- 12 9½	4 - 4¾	1 6 7½	5 19 9¾	6 12 8¼
" S. B. gun, without rammer heads, 10-inch or 8-inch, 100, 32, 24, 18, 12, 9, or 6-pr. iron gun	24	- 11 9½	4 14 5	1 10 4¼	6 16 6¾	7 11 2¾
Wagons, with pins, washers and wheels, covered, Royal Laboratory	1	27 2 10	25 14 -½	15 1 11½	67 18 10	75 4 10½
" " " " deal	2	28 10 2¼	34 17 -¾	18 2 1½	81 9 4½	90 4 6
" " " " forge, complete, with covers and drag shoe, cavalry	13	325 12 6¾	397 11 7¾	206 12 9¾	929 17 -¼	1,029 15 11¼
" " " " platform, with drag shoes, gun or mortar	13	262 11 5	305 4 10¼	162 4 9½	730 1 -¾	808 10 5¾
" " " " sling iron, heavy, 12-ton, with break	17	2,436 8 2¼	1,512 4 1½	1,128 4 6	5,076 16 9¾	5,622 10 7⅓
" " " " telegraph	1	30 2 11½	25 16 2½	15 19 9¼	71 18 11¼	79 13 7¼

No. 1.—Royal Carriage Department, Woolwich Arsenal—(C.) Return of Stores made New, &c.—*continued.*

DESCRIPTION.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Wagons, with pins, washers, and wheels, with limbers, boxes, and cartouches, complete, ammunition, gun, 6-pr. service -	6	111 3 1½	142 5 7	72 8 3¼	325 16 11¾	360 17 5¾
" with pins, washers, and wheels, with limber boxes and cartouches, complete, ammunition, gun, 6-pr., special, with drag shoes - - - - - - - -	6	196 13 3⅓	189 12 3	110 7 4¾	496 12 11¼	550 – 7
" with wheels, platform, 40-pr. battery - - - -	1	22 7 5	24 16 3	13 9 7½	60 13 3⅓	67 3 8⅓
" without wheels, platform, gun or mortar - - -	5	68 16 3¼	49 6 5⅓	33 15 1	151 17 9¾	168 4 4
" sling, wood, service, complete - - - - -	6	295 17 –½	265 9 10	160 7 10	721 14 8½	799 6 3
Washers, iron, ammunition or powder barrow, drag, and 7-pr. M. L. (Abyssinia) - - - - - - -	18	– 8 2	– 2 2⅓	– 2 11⅓	– 13 4	– 14 9
" G. S. drag - - - - - - - - -	10	– 5 8¾	– 4 8¾	– 3 –	– 13 5½	– 14 10¾
" of sorts - - - - - - - - -	361	– 3 8¼	– 4 2	– 2 3	– 10 1¼	– 11 2¼
Wedges, wood, of sorts - - - - - - - - -	12	– – 4⅓	– 2 10	– – 11	– 4 1½	– 4 6¾
Wheels, travelling, carriage, field, Madras pattern, with gun metal stock, 12-pr. - - - -	12	37 14 1¾	61 13 10⅓	28 8 –½	127 16 –¾	141 10 9¾
" " " 7-pr. M. L. R., with metal stocks	12	20 10 9¼	10 19 5¼	9 – –¾	40 10 3¼	44 17 4½
" " " and trench cart, and heavy pontoon, fore - - - -	2	2 6 4⅓	5 3 7	2 2 10	9 12 9⅓	10 13 6¼
" " " heavy and sling, wagon, limber -	1	1 – 8¾	2 18 3¾	1 2 7	5 1 7⅓	5 12 6⅓
" " " light - - - - -	9	9 6 1¾	24 19 7¾	9 15 11¼	44 1 8¾	48 16 6
" " " wagon, platform, fore - -	10	11 3 5¼	30 – 8½	11 15 5¾	52 19 7½	58 13 6¼
" " " G. S. carts, R. E. ambulance forage, Maltese, &c. - -	62	69 15 –½	142 10 11½	60 13 2¼	272 19 2¼	302 5 11¾
" " " naval, 6-pr. S. B., 20-pr. rifled -	12	13 2 7½	31 – 1¾	12 12 2¾	56 15 –	62 16 11¾
" " " siege gun and howitzer, and 13-inch mortar - -	32	57 12 6¼	164 9 4½	63 9 2	285 11 –¾	316 4 11
" " " " carts, sling - - -	10	19 17 2	55 17 9¼	21 12 10¼	97 7 9½	107 17 1¾
" " " transporting, axle, iron, platform, pairs - - - - -	4	10 1 2½	15 12 2	7 6 8¼	33 – –⅓	36 11 –
Wheels, iron, hand, elevating - - - - - - - -	2	– 6 –½	– 12 3	– 5 2¾	1 3 6¼	1 6 –⅓
" " compressing - - - - - - - -	2	– 6 3	– 13 4	– 5 7¼	1 5 2¼	1 7 10¾
" of sorts - - - - - - - - -	11	14 1 3¼	17 19 –⅓	9 2 11⅓	41 3 3¼	45 11 9½
Winch, iron, for running in and out gear of W. I. slides - -	1	10 14 –⅓	14 9 6⅓	7 3 10¾	32 7 5¾	35 17 1
Windlasses, sling cart or wagons - - - - - - -	2	29 11 6⅓	9 9 8⅓	11 3 2¾	50 4 5¾	55 12 5⅓

Windlasses, triangle gyn, 18 feet, heavy, 12 tons		9	132 3 5¼	45 10 6½	50 15 5½	228 9 5¼	253 – 7
" " 18 feet, light		1	14 18 2	4 17 5	5 13 –½	25 8 7½	28 3 3½
" " 16 feet		1	14 16 10	4 14 5¼	5 11 9½	25 3 –¾	27 17 1½
Woodwork Saddletrees;							
Arches, harness, drivers	front	4,000	38 6 8	77 – –	32 19 –¾	148 5 8¾	164 4 6¼
	hind	4,000	44 16 8	95 5 –	40 – 6	180 2 2	199 9 4¼
" luggage	front	2,200	17 8 4	32 1 8	14 2 10½	63 12 10½	70 9 8¼
	hind	2,200	18 12 2	38 12 9	16 7 1¾	73 12 –¾	81 10 3½
Bars, side harness, drivers	near	2,500	36 16 5½	71 17 6	31 1 1¾	139 15 1¼	154 15 6½
	off	2,500	36 16 5½	71 17 6	31 1 1¾	139 15 1¼	154 15 6½
" " luggage	near	1,200	11 – 3	14 – –	7 2 11¼	32 3 2¼	35 12 3¾
	off	1,200	11 – 3	14 – –	7 2 11¼	32 3 2¼	35 12 3¾
Tongues		6,200	4 3 11½	5 3 4	2 13 6¼	12 – 9¾	13 6 8½
Wedges		6,200	7 1 –½	10 11 10	5 – 9¾	22 13 8¼	25 2 5½
Bars, side, universal, N. P.	near	2,000	32 6 3	64 8 9	27 12 10½	124 7 10½	137 15 3½
	off	2,000	32 6 3	64 8 9	27 12 10½	124 7 10½	137 15 3½
" " " O. P.	near	500	8 1 6	16 2 2	6 18 3	31 1 11	34 8 9¼
	off	500	8 1 6	16 2 2	6 18 3	31 1 11	34 8 9¼
Arches, universal, N. P.	front	3,000	29 5 –	60 – –	25 10 –¼	114 15 –¼	127 1 8½
	hind	3,000	33 12 6	71 8 9	30 – 4½	135 1 7½	149 12 –
" " O. P.	front	2,000	21 19 8	45 8 –	19 5 –¾	86 12 8¾	95 18 11¾
	hind	2,000	26 3 3	66 11 8	26 9 11¾	119 4 10¾	132 1 2¾
Worms, wadhook, 7-pr. M. L. R. (Abyssinia)		13	1 15 9	– 8 1½	– 12 6½	2 16 5	3 2 5¾
Wrenches, connecting screw		1	– – 11¼	– 1 6¾	– – 8½	– 3 2½	– 3 6½
" G. service		58	17 15 2¼	4 19 8¼	6 9 11½	29 4 10	32 7 8¼
" square head		1	– – 8½	– – 6	– – 4¼	– 1 6¾	– 1 8¾
" transporting axle band for wood slides		12	1 18 4¼	1 1 4¾	– 17 –¾	3 16 9¾	4 5 –¾
" of sorts		2	– 13 7	– 3 8¾	– 4 11½	1 2 3¼	1 4 8
TOTAL		– –	65,097 16 4¼	74,005 1 11½	39,745 9 2¼	178,848 7 6	198,072 2 1½

Examined,
James C. Hurst,
Accountant and Auditor to the Manufacturing Departments.

H. Clerk, Colonel, R.A.,
Superintendent.

No. 1.—Royal Carriage Department, Woolwich Arsenal—*continued.*

(D.)—RETURN of Stores "Converted" in the Royal Carriage Department, between the 1st April 1867 and 31st March 1868, and delivered to the Principal Superintendent of Stores.

DESCRIPTION OF ARTICLES.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Axletrees, Wrought-iron:						
20-pounder rifled gun	3	– 11 –	– 8 –	– 5 5	1 4 5	1 7 –¼
12 „ (A)	6	– 17 3	– 14 –	– 8 11¼	2 – 2¼	2 4 6
24 „ howitzer	3	– 9 2	– 6 6	– 4 5¾	1 – 1¾	1 2 3½
Transporting, 9-inch	1	– 5 –	– 2 –	– 2 –	– 9 –	– 9 11½
„ 7-inch	25	5 16 8¾	2 8 3	2 7 1½	10 12 1½	11 14 10¾
„ 40-pounder, B. L.	11	6 6 8¾	– 13 7½	2 – 1	9 – 5¼	9 19 9¾
„ 64 „	4	– 15 4	– 4 7	– 5 8¼	1 5 7¼	1 8 4
Maltese cart, with pins and washers	161	27 4 4¼	4 1 1	8 18 8½	40 4 1¾	44 10 6¾
Axletrees, Wood:						
64-pounder	2	– 5 8	– 2 9	– 2 4¾	– 10 9¾	– 11 11½
9 „	2	– 4 3	– 1 11	– 1 9¾	– 7 11¾	– 8 10
6 „	2	– 2 9	– 1 6	– 1 2½	– 5 5½	– 6 –½
Barrows, powder, double	2	1 10 –	– 13 6	– 12 5	2 15 11	3 1 11
„ wheel, intrenching	8	– 6 4	– 9 4	– 4 5¾	1 – 1¾	1 2 3½
Bars, crow, 6 feet	1	– 1 –	– 1 6	– – 8½	– 3 2½	– 3 [illegible]
„ splinter, spare	8	– 8 7	– 6 4	– 4 3	– 19 2	1 1 3¾
„ metal, buffer	2	– 3 4	– 2 9	– 1 9¼	– 7 10¼	– 8 8¼
Beds, iron, mortar, 10-inch L., S. O., P.	1	– 16 3¼	– 16 5¼	– 9 4¼	2 2 –¾	2 6 7
„ stool, cast-iron, 24, 18, and 9-pr.	18	– 10 1¾	– 4 10½	– 4 3¼	– 19 3½	1 1 5½
Beds, Wood, Gun:						
7-inch W. I. M. L. R.	6	– 4 –	– –	– 1 1½	– 5 1½	– 5 8¼
„ B. L.	2	– 5 2	– 2 11	– 2 3	– 10 4	– 11 5½
10-inch	2	– 3 6	– 1 6	– 1 5	– 6 5	– 7 1¼
8 „	16	– 7 8	– –	– 2 2¼	– 9 10¼	– 10 11
68-pounder	4	– 7 9	– 4 –	– 3 4¼	– 15 1¼	– 16 8¾
64 „	4	– 12 8½	– 13 2	– 7 4½	1 13 3	1 16 10
40 „	2	– 18 –	– 9 10	– 7 11¼	1 15 9¼	1 19 7½
32 „	45	16 7 1	24 15 10	11 15 1½	52 18 –½	58 11 9¼
24 „	1	– 2 –	– 1 6	– 1 –	– 4 6	– 5 –
20 „	3	– 4 6	– 2 –	– 1 10½	– 8 4¼	– 9 3
9 „	1	– 5 –½	– 9 8	– 4 2¼	– 18 10¼	1 – 1¼
6 „ brass	2	– 14 1¼	– 9 9	– 6 8¾	1 10 7	1 13 10½
Beds, Wood, Howitzer:						
24-pounder	4	1 11 7½	– 17 6	– 14 –¼	3 3 1¾	3 9 11¼
12 „	1	– 1 –	– – 10	– 1 –½	– 2 10½	– 3 2¼
Beds, Wood, Mortar:						
5½ inch	7	2 9 7¼	– 13 5½	– 18 –	4 1 –¾	4 9 9¼
4⅖ „	4	1 4 7	– 7 6	– 9 2	2 1 3	2 5 8
Bits, harness	256	3 3 2	– –	– 18 –½	4 1 2½	4 9 11
Blocks:						
Iron, for slides	31	1 – 6	– 3 6	– 6 8	1 10 8	1 13 11½
Wood, Bothway's double, 15-inch	2	1 5 10¾	5 3 8¾	1 17 –¼	8 6 7¾	9 4 6½
„ brass, cogged, 6½-inch	4	– 6 10	– 3 9	– 3 –¼	– 13 7½	– 15 –¼
„ housing, 7-inch	11	– 12 3	– 8 6	– 5 11	1 6 8	1 9 6¼
Bolts, iron, for flaps	2	– 1 –	– –	– – 3¼	– 1 3¼	– 1 4¼

No. 1.—Royal Carriage Department, Woolwich Arsenal—(D). Return of Stores Converted, &c.—*continued.*

DESCRIPTION OF ARTICLES.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Boxes:						
Leather tube	778	28 6 5½	4 14 2¾	9 8 9¼	42 9 5½	47 – 9¼
Pipe, cast-iron	25	– 4 3	- -	– 1 2½	– 5 5½	– 6 –½
Tin, fuze	460	8 15 6	7 – –	4 10 2	20 5 8	22 9 3¼
„ grease	9	– – 9	– – 3	– – 3½	– 1 3½	– 1 5¼
„ nail	50	– 7 5	– 3 9	– 3 2½	– 14 4½	– 15 11
„ tube	32	– 3 7	– 1 10	– 1 6½	– 6 11½	– 7 8½
Boxes, Wood, Ammunition:						
20-pounder, F. S.	15	9 9 4	9 3 2	5 6 5¼	23 18 11¼	26 10 5
12 „ „	367	252 6 7½	270 16 11½	149 9 8¾	672 13 3¾	744 19 4¼
9 „ „	7	4 17 2	4 1 6¼	2 11 –½	11 9 8¾	12 14 4¾
6 „ „	10	3 17 11½	– 12 11¾	1 5 11¾	5 16 11	6 9 5¾
6 „ S. B.	2	– 14 –	– 11 6	– 7 3½	1 12 9½	1 16 3½
7 „	72	28 6 10	12 – 11¾	11 10 9¾	51 18 7½	57 10 3¼
12 „ naval	2	– 3 2	– 4 –	– 2 –½	– 9 2½	– 10 2¼
24 and 12-pounder howitzer	8	3 11 –¾	1 3 10½	1 7 1½	6 2 –¾	6 15 2¼
12 or 40-pounder, experiments, "Shoeburyness"	5	2 8 9	2 10 5¼	1 8 4	6 7 6¼	7 1 2¾
Boxes, Wood:						
Axletree	62	8 11 2	7 4 7	4 10 2½	20 5 11½	22 9 7½
Case shot, 9-inch	31	1 17 2	2 13 6	1 5 10¾	5 16 6¾	6 9 1
„ 7 „	1,552	54 7 1¾	74 11 8¼	36 16 10	165 15 8	183 12 –¾
„ 64-pounder	1,579	94 2 8	52 8 4¾	41 17 5¾	188 8 6½	208 13 7¼
„ 40 „	260	10 14 11	9 12 –½	5 16 3¼	26 3 2¾	28 19 5½
„ 20 „	295	19 8 7	24 3 7¾	12 9 3¼	56 1 6	62 2 –½
„ 7 „	363	6 1 –½	6 18 8½	3 14 2½	16 13 11½	18 9 10¼
„ 12 „ Reeve's	104	6 8 1¼	9 8 5½	4 10 5¼	20 7 –	22 10 9
Centre, 20 „ (A)	48	11 13 –	4 5 6	4 11 –¼	20 9 6¼	22 13 6½
„ wagon	70	21 19 10	6 14 2½	8 4 –¼	36 18 –¾	40 17 4¾
Chilled shells, 9-inch	380	10 4 4	33 3 2	12 7 10¼	55 15 4¼	61 15 3
Common shell, 9-inch	1,030	77 3 6	114 6 2	54 14 3	246 3 11	272 13 2
„ 8 „	502	33 9 7¼	19 16 9	15 4 8¼	68 11 –½	75 18 5
Limber and axle of batteries	14	4 17 6	2 13 6	2 3 1¾	9 14 1¾	10 15 –¼
Match, 6-pounder, S. B.	2	– 1 3¼	– – 9½	– – 7	– 2 7¾	– 2 11¼
„ 12 and 24-pounder howitzer	8	– 5 5¼	– 1 10¼	– 2 1	– 9 4½	– 10 4¾
Rocket, 24-pounder, L. S., O. P.	23	– 15 11¾	– 9 1	– 7 2	1 12 2¾	1 15 8¼
Shrapnell shells, 9-inch	413	34 14 1½	48 9 7¾	23 15 4¾	106 19 2	118 9 –¾
„ 8 „	523	34 13 1½	32 4 6¾	19 2 2½	85 19 10¾	95 4 9¼
„ 7 „	1,888	28 2 –½	63 8 10¾	26 3 1½	117 14 –¾	130 7 1¼
„ 64-pounder	770	36 – 2	31 1 3	19 3 3¼	86 4 8¼	95 10 –¾
Boxes, Wood, Shot and Shell:						
Rifled, 12 or 9-pounder "Teak"	10,152	643 18 9½	568 19 3½	346 11 2¼	1,559 9 3¼	1,727 1 8¼
„ No. 9 (A)	12	– 6 2	– 3 9	– 2 10	– 12 9	– 14 1½
„ 64-pounder	133	2 10 9	6 1 9	2 9 3½	11 1 9½	12 5 7½
„ 40 „	150	9 19 4½	8 14 5	5 6 9½	24 – 7	26 12 3
„ 20 „	30	2 – –½	1 15 6	1 1 7	4 17 1½	5 7 6¾
Of sorts	3,509	102 9 9	115 14 4¼	62 6 11¼	280 11 –½	310 14 1¾
Store, 12 and 24-pounder howitzer	8	– 3 2	– – 9	– 1 1½	– 5 –½	– 5 7
Buckets, spunge	4	1 16 –	– 6 –	– 12 –	2 14 –	2 19 9¾
Cacolets, pairs	2	– 3 4	– 4 10	– 2 4	– 10 6	– 11 7½
„ „ with pack saddles	12	14 4 2¼	5 8 7¾	5 12 2¾	25 5 –¾	27 19 4¼
Cans, tin, oil, lubricating	91	1 17 8	4 10 11¼	1 16 9	8 5 4¼	9 3 1½
Caps, canvas, spunge	4	– 8 –	– 4 –	– 3 5¼	– 15 5¼	– 17 1¼
„ spunge, 13-inch	1	– – 4	– – 10	– – 4	– 1 6	– 1 8
Capstan, crab	6	4 12 6¾	– 10 4¾	1 9 5¼	6 12 4¾	7 6 7½
Cars, railway	1	2 – 7¾	– 16 2¾	– 16 3	3 13 1½	4 – 11¾
„ S. A. ammunition	1	9 – 4½	3 4 2	3 9 10½	15 14 5	17 8 2½

No. 1.—Royal Carriage Department, Woolwich Arsenal—(D.) Return of Stores Converted, &c.—*continued.*

DESCRIPTION OF ARTICLES.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Carriages, 12-pounder:						
Two steel plates to represent, with wheels, &c.	1	3 16 4½	8 5 2¼	3 9 –	15 10 6¾	17 3 11¼
Two wrought-iron ditto, ditto	1	3 14 9½	3 8 –½	2 – 9¾	9 3 7¾	10 3 7
Carriages, C. I.:						
Garrison, 32-pounder	6	16 19 3½	11 12 9½	8 3 5½	36 15 6½	40 14 7½
„ 24 „ 50-cwt.	16	15 – 11¼	18 18 8½	9 14 2½	43 13 10¼	48 7 9½
Carriages, Wrought-iron:						
12-inch 23-ton	1	25 10 4¾	33 10 5	16 17 4¾	75 18 2½	84 1 4¾
10 „ 18 „	1	18 11 7½	25 15 10¾	12 13 7¼	57 1 1½	63 3 9½
9 „ 12 „ double plate	4	3 4 3	1 4 6	1 5 4½	5 14 1¼	6 6 4½
9 „ 12 „ single „	6	3 12 1	- -	1 – 7¼	4 12 8¼	5 2 7½
9 „ 12 „ E.O.C. pattern	31	69 15 3	22 13 8¾	26 8 3½	118 17 3½	131 12 9½
8-inch, Sir W. Armstrong's	11	11 11 8¼	2 17 5½	4 2 7½	18 11 9¼	20 11 8¾
7-inch 7-ton, garrison	7	11 11 –	5 15 –	4 18 10¼	22 4 10¼	24 12 8
7-inch 6½ „	70	65 15 –	59 8 6	35 15 3¾	160 18 9¾	178 4 9½
64-pounder B.L. or M.L.	1	1 11 7	– 18 4	– 14 3¼	3 4 2¼	3 11 1
32 „ non-recoil	2	2 – 1¼	– 5 2¼	– 12 11¼	2 18 2¾	3 4 6
Travelling, 40-pounder, E.O.C.	1	1 10 9½	– 6 1	– 10 6½	2 7 5	2 12 6¼
„ „ R.C.D	1	1 10 9½	– 6 1	– 10 6¼	2 7 4¾	2 12 6
Carriages, Wood, Garrison:						
Common, standing:						
32 and 18-pounder carronade	2	3 7 4¾	1 8 8¼	1 7 5½	6 3 6½	6 16 10
8-inch 65-cwt. gun	3	12 – 10¼	6 5 9¼	5 4 9	23 11 4½	26 1 11¼
32-pounder	122	1,141 9 –½	415 – 6	444 14 6¾	2,001 4 1¼	2,216 6 1½
24 „ 50-cwt.	4	9 10 11	5 8 6	4 5 6¼	19 4 11¼	21 6 4¼
18 „	2	6 17 11	12 7 4½	5 10 1	24 15 4½	27 8 7½
Rear chock, 8-inch	26	171 18 11¾	168 11 8¾	97 6 –	437 16 8½	484 17 9
„ 68-pounder	7	30 1 2	49 9 7¼	22 14 6¼	102 5 3½	113 5 1½
„ 64 „	42	204 15 2½	234 18 2¾	125 12 6½	565 5 11¾	626 1 2¾
Sliding, 9-inch	1	3 4 3¼	– 11 1¾	1 1 6½	4 16 11½	5 7 4½
„ 8-inch shunt, rifled, M.L., E.O.C.	1	4 12 5¼	– 9 11½	1 9 3	6 11 7¾	7 5 9½
„ 7-inch dwarf	35	384 6 9½	410 16 –½	227 3 10½	1,022 6 8½	1,132 4 5½
„ 68-pounder	28	368 2 1	500 1 11¼	248 1 4½	1,116 5 4¾	1,236 5 –¾
„ 64 „	12	157 17 –	116 13 –	78 8 7½	352 18 7½	390 17 4
„ 32 „	16	189 13 4	150 – –	97 1 –½	436 14 4½	483 13 2¼
„ 24 „	6	48 9 9¾	36 13 2½	24 6 7¼	109 9 7½	121 4 11¾
Rodman's 15-inch gun	1	6 3 4¾	6 8 5½	3 11 11½	16 3 9¾	17 18 7¼
Major Palliser's 5·72 M.L. gun	2	9 – 10¼	5 14 11	4 4 6¼	19 – 3½	21 1 1¾
40-pounder, non-recoil	1	1 11 3¼	– 1 7¼	– 9 4¾	2 2 3¼	2 6 10¼
Carriages, Wood, Travelling, L.S.:						
Complete, F.S., with limbers:						
20-pounder gun	10	201 4 8½	178 18 1¼	108 12 4	488 15 1¾	541 5 10
12 „ „	28	485 9 5½	408 6 7	255 7 8	1,149 3 8½	1,272 14 1¾
9 „ „	53	819 12 10¾	764 16 1½	452 14 4¾	2,037 3 5	2,256 2 9½
6 „ „	8	119 15 10¼	107 7 2¼	64 18 1	292 1 1½	323 8 11½
5½-inch howitzer	2	3 19 4½	– 7 6	1 4 10	5 11 8½	6 3 8½
24-pounder „	19	232 2¾	191 12 9¾	121 – 11¾	544 14 –¼	603 4 11½
12 „	12	212 9 4¾	161 16 3½	106 18 10¼	481 4 6½	532 19 –½
F.S., without limbers, 20-pounder	1	6 2 2½	5 11 2	3 6 8¼	15 – –¾	16 12 3¾
„ „ 9 „	1	2 8 9	3 1 3½	1 11 5¼	7 1 5¾	7 16 8¼
Mountain service, 7-pounder	2	11 6 5¼	7 – 3¾	5 4 9½	23 11 6½	26 2 3
Rocket, with limbers, 12-pounder	1	4 2 3½	3 4 1	2 1 9¾	9 8 2¼	10 8 5
„ „ 6 „	1	3 6 4	2 7 1	1 12 4¾	7 5 9¾	8 1 6

No. 1.—Royal Carriage Department, Woolwich Arsenal—(D.) Return of Stores Converted, &c.—*continued.*

DESCRIPTION OF ARTICLES.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Carriages, Wood, Travelling, L.S., Siege:						
With limber, 8-inch - - -	12	197 3 8¼	172 11 4½	105 12 11½	475 8 -¼	526 10 -
" 40-pounder - -	5	211 11 4¾	209 2 10½	120 4 2¼	540 18 5½	599 1 3½
" 24 " - - -	51	909 12 10¼	750 4 10¼	474 5 5¾	2,134 3 2¼	2,363 11 1
Without limber, 32-pounder - -	1	- 1 3¼	- 1 7¼	- - 10	- 3 9	- 4 1¾
" 18 " bracket trail	2	7 10 1¾	6 19 2¼	4 2 8	18 11 11½	20 11 11½
Carriages, Wood:						
9-inch rifled howitzer, with C.I. top bracket, L.S. - - - -	1	7 7 -½	7 5 8	4 3 7¾	18 16 4¾	20 16 9¾
Carriages, Wood, Boat Service:						
12 pounder, N.P. - - - -	4	43 18 6½	15 6 9¾	16 18 8¼	76 4 -¼	84 7 10
9 " " - - - -	1	6 17 9¾	3 16 7¾	3 1 3¼	13 15 8¾	15 5 3
Top and under, 6-pounder B.L. -	7	9 - 2½	8 13 10½	5 1 2	22 15 3	25 4 2½
" 9 " -	18	130 6 7½	52 - 5	52 2 -¾	234 9 1¼	259 13 1½
" 12 " -	27	224 1 9¾	101 15 4¼	93 2 1½	418 19 3½	463 19 11½
" 23 " -	7	50 12 7	20 10 10	20 6 8½	91 10 1½	101 6 10½
" 24-pounder howitzer	17	38 14 2½	22 5 11¼	17 8 7½	78 8 9¼	86 17 4¾
Carriages, Wood, S.S.:						
Ship, common, 64-pounder - -	91	459 9 2	392 2 4	243 6 4¼	1,094 17 10¼	1,212 11 7
" " 40 " - -	5	8 11 -¾	7 - 6¼	4 9 -¼	20 - 7¼	22 3 8
" " 32 " - -	42	301 19 9¾	278 3 7	165 15 4¾	745 18 9½	826 2 4½
Ship, jamming, 32-pounder - -	2	- 13 8¼	- 3 4¼	- 4 10½	1 1 11	1 4 3¼
Rear chock, 10-inch - - -	10	50 9 9¾	50 15 4½	28 18 7¾	130 3 10	144 3 8
" 20-pounder - - -	15	42 17 4½	34 10 -½	22 2 1¾	99 9 6¾	110 3 5
" 12-pounder, rifled -	2	10 17 2½	7 4 8½	5 3 5	23 5 4	25 15 4¼
" 24-pounder howitzer -	8	8 6 2¾	6 13 10	4 5 8¾	19 5 9½	21 7 3
" 12 " " -	1	- 9 1¾	- 3 9¾	- 3 8½	- 16 8	- 18 5½
Ship, sliding, 10-inch - - -	1	3 1 11½	1 12 1	1 6 11¾	6 1 -¼	6 14 -¼
" " 8 " - - -	3	23 6 4	20 8 8½	12 10 -¼	56 5 -¾	62 6 -
" " 7 or 9-inch - -	36	386 15 10	319 10 2	201 16 2¼	908 2 2¼	1,005 14 4½
" " 7-inch M.L. - -	13	126 14 2	109 8 2	67 9 3½	303 11 7½	336 4 3
" " 64-pounder M.L. -	23	346 8 4½	333 18 11½	194 7 11¾	874 15 3¾	968 15 9¾
" " 40 " B.L. -	15	279 7 10½	219 13 8¾	142 12 -¼	641 13 7½	710 13 -¾
" " 20 " " - -	4	21 4 10½	9 7 4¾	8 14 11¼	39 7 2½	43 11 9¾
Travelling, with limbers, 20-pounder -	2	12 7 1¼	9 8 6½	6 4 5¾	28 - 1½	31 - 4
" " 12 " -	15	118 19 5¼	109 2 10¾	65 3 7	293 5 11	324 16 5
" " 9 " -	12	116 4 2	106 7 -	63 11 9¾	286 2 11¾	316 18 1¼
" " 6 " -	1	8 9 3½	7 18 3½	4 13 7	21 1 2	23 6 5½
Carriages and slide skeleton, 40-pounder gun - - - - - - -	2	1 2 7	- 18 6	- 11 9	2 12 10	2 18 6¼
Carriages, wagon, &c., grand depôt, to be painted - - - - - -	13	1 16 8	- - 3¼	- 10 6½	2 7 5¾	2 12 7
Carriages, &c. on the wharf and in store, to be painted and adjusted - -	-	73 3 -¾	18 9 10¼	26 3 8½	117 16 7½	130 9 11
Cartouches, canvas - - - -	50	- 14 7	1 8 11	- 12 5	2 15 11	3 1 11
Carts, forage, complete - - -	1	2 5 2½	2 17 10¼	1 9 5¼	6 12 6	7 6 9
" forge - - - - -	1	8 13 10¼	3 5 5¾	3 8 4½	15 7 8½	17 - 9¼
" hand, common - - - -	31	150 11 -¾	84 4 5½	67 1 7½	301 17 1¾	334 6 -¾
" " forage pattern - - -	20	59 10 8	63 9 7	35 2 11¼	158 3 2¼	175 3 2¼
" hospital - - - - -	6	40 16 3½	25 1 9	18 16 7¼	84 14 7¾	93 16 9½
" Maltese - - - - -	445	946 12 8¾	862 5 9¼	516 17 2	2,325 15 8	2,575 15 5½
" medical store - - - -	2	18 2 2½	11 17 2	8 11 3	38 10 7½	42 13 5½
" sling, complete - - -	5	48 16 4½	34 11 2	23 16 5½	107 4 -	118 14 5½

No. 1.—Royal Carriage Department, Woolwich Arsenal.—(D.) Return of Stores Converted, &c.—*continued.*

DESCRIPTION OF ARTICLES.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Carts, small arm ammunition	2	17 3 7	4 7 5	6 2 9½	27 13 9½	30 13 6¾
„ store	34	153 17 3¼	263 18 –½	119 7 4¼	537 2 8	594 17 4
„ tip	20	126 16 8	97 11 8	64 2 5¼	288 10 9¼	319 11 –½
„ water	25	178 12 8¾	50 16 10¾	65 11 4½	295 1 –	326 15 3¼
„ watering	7	16 6 10½	5 12 9¾	6 5 7¾	28 5 4	31 6 1
„ with corrugated iron body for removing slag and refuse sand	1	23 12 9¼	10 12 –½	9 16 –½	44 – 10¼	48 15 6¼
„ wagon, and spare articles for Royal Engineers	7	4 10 8½	– 9 7¼	1 8 8	6 8 11¾	7 2 10
Cases, leather, tube, small	1,059	40 8 11	6 9 10½	13 8 3	60 7 –½	66 16 9¼
„ „ vent piece	8	– 7 6	– 1 3	– 2 6	– 11 3	– 12 5½
„ packing, loose parts of iron carriages	77	6 2 5¾	2 16 10¼	2 11 3	11 10 7	12 15 4½
„ pannels, drivers'	240	33 – 11	34 11 3	19 6 4¼	86 18 6¼	96 5 4½
„ „ riding	6	– 18 6	– 18 1¾	– 10 5¾	2 7 1½	2 12 9¼
„ „ universal and officers'	640	88 17 11½	146 15 8¼	67 6 9¾	303 – 5½	335 11 10½
Casks, water	50	2 13 8½	1 1 10¼	1 1 7	4 17 1¾	5 7 7
Chocks, dismounting, pairs	22	17 19 6¾	18 10 2¾	10 8 6	46 18 3½	51 19 1½
„ wood, depressing	4	– 3 5	- -	– – 11½	– 4 4½	– 4 10
„ „ 64-pr. or 7-inch, pairs	14	9 14 1	10 12 9	5 16 2¾	26 3 –¾	28 19 3¼
Coatings, spunge	40	1 3 4	- -	– 6 7¾	1 9 11¾	1 13 1¼
Coins, wood, large, 7-inch	20	– 7 10¼	– 3 7	– 3 3¼	– 14 8½	– 16 3½
„ „ 40-pr.	2	– 1 2½	– – 6	– – 6	– 2 2½	– 2 5¼
„ „ 32-pr.	66	1 11 1½	1 3 –	– 15 5½	3 9 7	3 17 –¼
„ „ 20-pr.	1	– – 4¾	– – 4	– – 2½	– – 11¼	– 1 –½
„ „ 6-pr.	1	– – 5½	– – 4	– – 2¾	– 1 –¼	– 1 1½
„ „ 24-pr. howitzer	81	1 19 9	1 5 6	– 18 6½	4 3 9½	4 12 9½
„ mortar, 8-inch, S. S.	2	– 1 2½	– – 6	– – 6	– 2 2½	– 2 5¼
„ small, 7-inch	19	– 19 11	- -	– 5 8¼	1 5 7¼	1 8 4½
„ „ 20-pr.	1	– – 4	– – 3	– – 2¼	– – 9¼	– – 10¼
„ „ 6 pr.	12	– 7 3	- -	– 2 1	– 9 4	– 10 4
„ of sorts	136	3 15 6¼	1 11 3	1 10 6	6 17 3¼	7 12 –¼
Collars, neck, horse	1,611	349 18 5	423 6 6	220 18 9	994 3 8	1,101 – 10½
Compressors, iron, side plate, 9-inch	12	3 – 3	3 15 6	1 18 9½	8 14 6½	9 13 3½
„ „ „ 7-inch	80	10 5 8	13 3 11	6 14 2	30 3 9	33 8 7¾
„ „ „ 68-pr.	14	4 – 4	4 3 6	2 6 9¾	10 10 7¾	11 13 3½
„ „ „ 64-pr.	19	5 5 10	5 15 9	3 3 3¾	14 4 10¾	15 15 6¼
„ „ „ spare	9	2 7 1	2 18 9	1 10 3	6 16 1	7 10 8½
„ wood, 8-inch	1	– 1 6	– 1 5¼	– – 10¼	– 3 9½	– 4 2¼
Covers, canvas, general service, wagon	2	1 11 6	– 19 3½	– 14 6¼	3 5 3¾	3 12 4
„ „ loin	113	3 3 8	2 1 2	1 9 11½	6 14 9½	7 9 3¼
„ „ store wagon	1	– 14 7	– 9 7½	– 6 11	1 11 1½	1 14 5¾
„ mainsail, dressed	1	– 6 8	– 18 1½	– 7 1	1 11 10½	1 15 4
„ slot	4	– 3 6	- -	– 1 –	– 4 6	– 4 11¾
Cruppers	2,268	93 2 –¾	100 2 3¾	55 4 2	248 8 6½	275 2 7
Drugs, large	5	8 18 6¼	2 4 4	3 3 8	14 6 6¼	15 17 3¾
„ small	4	3 11 –¼	1 3 3¼	1 6 11¼	6 1 2¾	6 14 3
Fids, wood	1	– – 3	- -	– – –¾	– – 3¾	– – 4¼
Fittings, leather, for ammunition boxes, sets	1	9 16 2¼	3 15 2½	3 17 6½	17 8 11¼	19 6 7¼
Flaps, metal	19	– 17 6	- -	– 5 –	1 2 6	1 4 11
Forges, portable	2	1 10 8	– 5 2¾	– 10 3	2 6 1¾	2 11 1¼
Frogs, cutlass	40	– 1 2	– – 2½	– – 4¾	– 1 9¼	– 1 10¼
Gyns, triangle, complete, 16 feet	2	1 4 5	7 4 6	– 8 3½	1 17 2½	2 1 2¼
„ „ „ 18 „	5	40 2 7¾	11 15 5	14 16 7¼	66 14 8	73 18 2¼

No. 1.—Royal Carriage Department, Woolwich Arsenal—(D.) Return of Stores Converted, &c.—*continued.*

DESCRIPTION OF ARTICLES.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Hames, iron collar, fitted with patent lock joint, pairs	50	36 14 7¾	6 16 –¼	12 8 9¼	55 19 5¼	61 19 9
Handspikes, wood, common, 6 feet	12	– 4 8	- -	– 1 4	– 6 –	– 6 7½
„ „ roller - 6 „	65	23 11 3½	23 2 11¾	13 6 11½	60 1 2¾	66 10 4
„ traversing	45	– 12 –½	– 7 6¼	– 5 7	1 5 1¾	1 7 10
Harness, mules, complete, sets	4	– 1 –	– – 5¾	– – 5	– 1 10¾	– 2 –
„ wheel, sets	1,800	390 3 5½	413 1 –¼	229 10 –¾	1,032 14 6½	1,143 14 8¼
Heads, bridle, universal	200	1 16 10¼	– 1 4	– 10 10¾	2 9 1	2 14 4¼
Jacks, lifting	4	– 7 –	– 3 –	– 2 10	– 12 10	– 14 2½
„ screw (Clerk's)	6	3 15 8	– 18 9	1 6 11¾	6 1 4¾	6 14 5½
Keys, forelock, iron	27	– 5 8	- -	– 1 7¼	– 7 3¼	– 8 –¾
Ladders, packsaddle, 7-pr. brass gun	36	1 10 2¾	– 7 –	– 10 7½	2 7 10¼	2 13 –
Levers, gyn	12	– 3 6	- -	– 1 –	– 4 6	– 4 11¾
„ iron, elevating	2	– – 7½	- -	– – 2	– – 9½	– – 10½
„ wood, iron pointed	209	5 6 7¾	– 9 1	1 13 –¾	7 8 9½	8 4 9½
„ „ „ shod	40	– 4 9	- -	– 1 4¼	– 6 1¼	– 6 9
„ „ rear roller	10	– 3 6	- -	– 1 –	– 4 6	– 4 11¾
Limbers, 32-pr., siege	1	11 18 10¼	10 5 1¾	6 6 10¼	28 10 10¼	31 12 2½
„ 6-pr., naval, S. B.	1	1 14 5	– 14 11	– 14 1	3 3 5	3 10 2¾
„ ammunition waggon, with boxes and wheels	165	1,290 19 11¼	1,115 2 6½	687 9 10½	3,093 12 4¼	3,426 2 9½
Litters, pairs	14	2 6 3½	1 2 10¼	– 19 9	4 8 10¾	4 18 5½
Loops, dismounting, chock	1	– – 2	- -	– – –¼	– – 2¼	– – 2½
Locks, metal, spring	27	– 2 5	- -	– – 9½	– 3 2¼	– 3 6½
Magazines, boat	3	1 15 1	– 13 5	– 13 11½	3 2 5½	3 9 2
Mantlets, iron	14	11 1 5½	5 11 5¼	4 15 1¼	21 8 –	23 14 –
Pannels, universal, pairs	250	16 13 8	43 9 5½	17 3 9	77 6 10½	85 13 1¾
Perches	12	5 3 2	3 19 6	2 12 4½	11 15 –½	13 – 3½
Paulings, waterproofed	260	59 15 –¾	215 6 11½	78 12 –¾	353 14 1	391 14 5¼
Pins, linch, spare	40	– 3 2	- -	– – 10¾	– 4 –¾	– 4 6
„ metal, preventor rope	38	– 6 8½	- -	– 1 11	– 8 7½	– 9 6½
„ split, for rollers	2	– – 3	- -	– – –¾	– – 3¾	– – 4
Plates, strengthening	24	– 4 1½	- -	– 1 2	– 5 3½	– 5 10¼
Platforms, siege (Col. Clerk's)	10	4 4 3¼	2 2 3½	1 16 2	8 2 8¾	9 – 2½
Platforms, Wood:						
Traversing, casemate, 64-pr.	7	4 14 1¼	29 18 5	9 17 10½	44 10 4¾	49 6 3
„ dwarf, 7-inch	10	19 11 5½	6 9 –	7 8 8½	33 9 2	37 1 1
„ „ 68-pr., 95 cwt.	1	8 19 9¼	10 16 11¼	5 13 4¼	25 10 –¾	28 4 10½
„ „ 64-pr. B. L.	8	29 19 6	17 10 6½	13 11 5½	61 1 6	67 12 9½
„ „ 40-pr.	7	22 16 9	7 11 2¾	8 13 8½	39 1 8½	43 5 8½
„ „ 32-pr.	15	2 8 2¾	3 4 2	1 12 1¼	7 4 6	8 – –½
Pivotting, 9-inch	1	8 1 9¼	8 12 8¾	4 15 7	21 10 1	23 16 3½
8-inch or 32-pr., O. P.	1	10 13 7½	5 8 7	4 12 –¾	20 14 3¼	22 18 9½
Platforms, Wrought-iron:						
12 inch, 23-ton	1	22 14 5	15 2 8¼	10 16 4	48 13 5¼	53 18 –¾
9 „ 12 „ E. O. C.	33	17 2 4	8 4 7¼	7 4 10¼	32 11 9½	36 1 10¼
7 „ 7 „	4	42 14 –	27 8 4	20 – 8¼	90 3 –¼	99 16 9¾
32-pr., non-recoil	1	– 3 7	1 12 10½	– 10 5	2 6 10½	2 11 11
Plugs, wood, carriage	26	– 4 –	– 1 3	– 1 6	– 6 9	– 7 5½
Pontoons, heavy, O. P.	1	2 13 8	– 9 10¾	– 18 2	4 1 8¾	4 10 6
Posts, picket	12	– 19 –½	– 1 11¼	– 6 –	1 6 11¾	1 9 10½
Rammers, gun, rifled, 9-inch M. L.	11	– 8 6	– 9 4	– 5 1	1 2 11	1 5 4½
„ „ „ 7-inch	4	– 2 11½	– 3 1	– 1 8¾	– 7 9¼	– 8 7¼
Rests, tripod	26	– 11 6	- -	– 3 3½	– 14 9½	– 16 4½
Rings, india-rubber	15	– 4 3	- -	– 1 2½	– 5 5½	– 6 –½
Rods, cleaning	4	– 1 4	- -	– – 4¼	– 1 8½	– 1 10½
„ pointing	10	– 1 8	- -	– – 5¾	– 2 1¾	– 2 4½
Rollers, metal, for carriage and slide	225	8 8 9¾	1 3 2	2 14 9¾	12 6 9½	13 13 3¾
„ wood, shifting	4	– 1 1½	- -	– – 4¼	– 1 5¾	– 1 7¾

No. 1.—Royal Carriage Department, Woolwich Arsenal—(D.) Return of Stores Converted, &c.—*continued.*

DESCRIPTION OF ARTICLES.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Ropes, check, for 12-ton gun, with necessary ironwork	1	6 14 4	7 17 8½	4 3 5¼	18 15 5¾	20 15 10
„ preventor	1	– – 8¼	– 2 1	– – 9½	– 3 6¾	– 3 11¼
Ropework, for derrick and shears	8	– 6 10	- -	– 1 11½	– 8 9½	– 9 9
Saddles, drivers	3,013	308 10 10¾	153 – 9½	131 17 8¾	593 9 5	657 5 2½
„ luggage	2,757	282 9 6½	150 3 11½	123 12 6½	556 6 –½	616 1 11¼
„ pack, complete	1,155	252 18 7¾	146 15 10	114 4 3	513 18 8¾	569 3 6¾
Screws, elevating, box, for 6-pr. brass gun	1	– 1 7¼	– – 7¾	– – 7¾	– 2 10¾	– 3 2½
„ „ of sorts	69	1 18 7¼	– 4 7½	– 12 4¼	2 15 7	3 1 6¾
Shackles, iron, breeching	148	1 15 6	- -	– 10 1¾	2 5 7¾	2 10 6½
„ „ lever	275	1 13 1¼	– 11 9½	– 12 10	2 17 8¾	3 3 11¼
„ „ tackle	24	– 11 6½	– 3 2	– 4 2½	– 18 11	1 – 11¼
„ „ traversing	12	– 1 1	– – 9	– – 6¼	– 2 4¼	– 2 7¼
Shafts, framed, pairs	2	– – –¼	– – 9	– – 2¾	– 1 –	– 1 1¼
„ single, near and off	26	– 4 2¼	– 6 5½	– 3 –½	– 13 8¼	– 15 2
Sheaves, metal, with pins for train whip	59	– 11 4¾	– 1 1½	– 3 7	– 16 1¼	– 17 10
Shoes, drag	21	– 3 9	– 1 1	– 1 4½	– 6 2½	– 6 10½
Sleighs, wood, 12-pr. gun	4	10 11 5¼	8 9 –¼	5 8 8¼	24 9 1¾	27 1 8¾
„ „ 20-pr. wedge gun	1	1 19 –½	1 6 –	– 18 7	4 3 7½	4 12 7¼
Slides, Wood:						
10-inch S. B. gun	2	8 18 8¼	8 17 1¼	5 1 8	22 17 5½	25 6 7½
7-inch B. L.	31	401 12 3	633 18 6	295 17 7½	1,331 8 4½	1,474 10 6¾
7-inch M. L.	16	160 10 7	354 19 2	147 5 9¼	662 15 6¼	734 – 3¾
40-pr.	6	50 12 4½	18 15 3	19 16 5¾	89 4 1¼	98 15 10½
12-pr. howitzer	1	– 19 8¾	– 3 9½	– 6 8¾	1 10 3	1 13 6
Boat service, top and under, 12-pr. rifled	3	2 13 9	1 5 8	1 2 8¼	5 2 1¼	5 13 1
Rodman's gun, 15-inch	1	– 17 11	– 4 11¼	– 6 6½	1 9 4¾	1 12 6½
Dwarf, pivoting, 8-in. or 40-pr. gun	13	79 9 8¾	68 15 3¼	42 7 2	190 12 2	211 1 11¼
„ „ 150-pr.	2	19 4 9	16 8 2	10 3 8½	45 16 7½	50 15 1¾
„ „ 100-pr.	2	14 3 9	13 10 2	7 18 3¼	35 12 2¼	39 8 8¾
„ „ 64-pr.	13	98 18 7½	112 17 3¼	60 10 3¾	272 6 2½	301 11 7¼
„ „ naval, 12 feet	2	14 16 5	20 14 2	10 3 –½	45 13 7½	50 11 10
Ship jamming, 32-pr., 25-cwt.	2	1 – 8½	– 6 –¾	– 7 7¾	1 14 5	1 18 1¼
Skeleton, 7-inch	1	1 11 6½	1 3 2	– 15 7½	3 10 4	3 17 10¾
Slides, Wrought iron:						
10-inch 18-ton gun	1	9 2 –	2 19 1¾	3 8 10¾	15 10 –½	17 3 4½
8-inch or 9-inch rifled gun	12	50 19 10¼	47 19 7½	28 5 7	127 5 –¾	140 18 7½
8-inch, E. O. C. pattern	1	2 1 11½	2 1 10¼	1 3 11½	5 7 9¼	5 19 4¼
7-inch 6½-ton gun	72	271 10 6¾	249 3 4½	148 15 6½	669 9 5¾	741 8 7¾
Spare articles for W. I. carriages and platform	88	– 19 7½	– 1 11	– 6 1¾	1 7 8¼	1 10 7¾
Spars, for bridging	130	1 18 4¼	– 11 3½	– 14 2¼	3 3 10	3 10 8¼
Sockets, eccentric rollers	18	– 8 7¼	– 1 9½	– 2 11¾	– 13 4½	– 14 9½
„ lever	52	– 7 9¼	– 3 11	– 3 4	– 15 –¼	– 16 7½
„ or pipes, metal, for breeching hole	34	– 4 6½	– 1 1	– 1 7¼	– 7 2¾	– 7 11¾
Spunges, gun, rope, 9-inch rifled	24	– 4 9½	– 1 11	– 1 11	– 8 7½	– 9 6½
„ „ „ 7-inch „	10	2 4 10¾	2 18 8¾	1 9 6	6 12 11	7 7 2¼
„ „ 7-pr.	1	– 1 1	- -	– – 3¾	– 1 4¾	– 1 6½
„ „ stave, 9-inch rifled M. L.	12	– 7 6½	– 9 6	– 4 10½	1 1 11	1 4 3½
„ „ „ 7-inch „ „	7	– 7 6½	– 7 10	– 4 4¾	– 19 9¼	1 1 10¾
Stores for infantry, pontoon pieces	41	– 2 –	- -	– – 6¾	– 2 6¾	– 2 10
Sticks, rocket, sawn	1,275	2 11 5½	- -	– 14 8½	3 6 2	3 13 3¼
Straps, leather, carbine bucket	300	1 6 8½	– 3 3½	– 8 7	1 18 7	2 2 8¾
„ lifting projectile	304	1 7 6	– 3 6	– 8 10¼	1 19 10¼	2 4 1½
„ rocket bucket	315	1 9 7¼	1 10 11	– 17 3½	3 17 9¾	4 6 2
„ T. C.	960	– 9 1¾	– 4 –¾	– 3 9¼	– 16 11¼	– 18 9
„ vent pieces, case	8	– – 5	– – 4	– – 2¼	– – 11¼	– 1 –¼

No. 1.—Royal Carriage Department, Woolwich Arsenal—(D.) Return of Stores Converted, &c.—*continued.*

DESCRIPTION OF ARTICLES.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Stretchers, ambulance waggon	2	– 4 9½	– 3 2	– 2 3¼	– 10 2¾	– 11 6½
Tackles, luff	27	– 10 3	– 5 6	– 4 6	1 – 3	1 2 5
Tampeons	4	– 2 1½	- -	– – 7¼	– 2 8¾	– 3 –
Timber, deals, 3-inch, sawn	1,000	72 16 10½	- -	20 16 3¼	93 13 1¾	103 14 5¾
„ feet running „	425	– 8 10	- -	– 2 6¼	– 11 4¼	– 12 7
„ feet super. „	3,581	5 16 10¼	- -	1 13 4¾	7 10 3	8 6 4¾
„ in the log, sawn, loads	100	48 2 9¾	- -	13 15 1¼	61 17 11	68 10 11¾
Traces, short, pairs	900	11 5 –	- -	3 4 3½	14 9 3½	16 – 4¾
Trails, 9-pr. S. B.	1	2 10 5¾	1 12 5¾	1 3 8¼	5 6 7¾	5 18 1¼
Trees, packsaddle, G. service, altered to "Otago" pattern	1	– 16 5½	– – 9½	– 4 11¼	1 2 2¼	1 4 6¾
Trucks, iron, hollow, soled	35	1 18 6½	– 9 8	– 13 9¼	3 1 11¾	3 8 7¾
„ miners	1	– 6 9¼	– 3 11	– 3 –¾	– 13 9	– 15 2¾
„ railway, large	1	10 6 6¼	4 3 4½	4 2 9¾	18 12 8½	20 12 9¼
„ wood, 64-pr., fore and hind	16	– 14 3	– – 7¾	– 4 3¼	– 19 2	1 1 2¾
„ „ 8-in. or 32-pr., fore	262	9 6 3¼	1 5 10¼	3 – 7¼	13 12 8¾	15 2 –½
„ „ „ „ hind	262	9 6 3¼	1 5 10¼	3 – 7¼	13 12 8¾	15 2 –½
„ „ S. S. of sorts	309	12 12 11	1 1 8	3 18 5½	17 13 –½	19 10 11¾
„ „ transporting, 7-inch	48	1 5 8	– 14 3	– 11 4¾	2 11 3¾	2 16 10
Tubes, rocket	27	– 1 –	- -	– – 3½	– 1 3½	– 1 5¼
Valises, tent	4	1 15 –	– 10 –	– 12 10¼	2 17 10¼	3 4 –¾
Wadhooks, gun, M. L., rifled, 7-inch and 9-inch	79	4 1 11¼	2 15 6¾	1 19 3½	8 16 9½	9 15 9½
Wagons, ambulance, fitted with steel springs	66	607 13 8½	241 3 11	242 10 11½	1,091 8 7	1,208 14 10¼
Wagons, ammunition, covered	6	48 17 4¾	34 19 10¾	23 19 3	107 16 6½	119 8 4
Wagons, Ammunition, with Limbers, complete:						
9-pr. (A.)	37	455 16 1½	406 17 2	246 9 8¾	1,109 3 –¼	1,228 7 4¾
12-pr.	9	100 17 1	54 8 2¾	44 7 3¼	199 12 7	221 1 8¾
40-pr.	3	46 13 5	34 13 8¼	23 4 11	104 12 –¼	115 16 10¾
9-pr. S. B.	4	48 17 8½	39 3 5	25 3 2½	113 4 4	125 7 8¾
6-pr. „	4	45 7 2¾	27 3 1	20 14 4¾	93 4 8½	103 5 1½
24-pr. howitzer	30	517 9 11½	207 7 6¼	207 2 3¾	931 19 9½	1,032 3 3½
32-pr. „	8	171 9 –¼	68 1 6½	68 8 9½	307 19 4¼	341 1 4¾
Wagons, bread	13	239 17 3¼	119 12 1	102 14 2¼	462 3 6½	511 17 1¼
„ deal	3	5 3 2¼	4 11 1½	2 15 6¼	12 9 10	13 16 8
„ forage, complete	12	76 – 1¾	49 7 6	35 16 6	161 4 1¾	178 10 8½
„ forge	42	426 16 7¾	421 8 8¾	242 7 5½	1,090 12 10	1,207 17 5
„ Flanders, with hoops and covers	12	122 18 6¼	72 10 5	55 16 10½	251 5 9¾	278 6 –¼
„ general service	52	465 6 9	547 3 8¼	289 6 1¼	1,301 16 6½	1,441 15 1¼
„ magazine	4	14 6 10½	13 1 4½	7 16 7¾	35 4 10½	39 – 7½
„ manure	14	175 19 1¼	177 3 4¼	100 17 11¼	454 – 4¾	502 16 4¾
„ platform	5	41 9 10½	45 3 6	24 15 3¼	111 8 7¾	123 8 2½
„ range	1	14 4 11½	9 7 6¼	6 15 –	30 7 5¾	33 12 9¼
„ rocket	8	10 2 10¾	6 4 2½	4 13 5¼	21 – 6½	23 5 9¼
„ sling	12	131 7 1½	117 19 4½	71 4 9½	320 11 3	355 – 4½
„ store	29	243 6 4¾	245 5 1¾	139 12 –	628 3 6½	695 13 11½
„ telegraph, with eight drums	1	11 4 –½	4 14 10¾	4 11 1½	20 10 –¾	22 14 1¾
„ with limbers for Hale's rocket, complete, with intrenching tools	1	21 5 11	18 14 10¾	12 8 9¾	51 9 7½	57 – 3½
Washers, drag, spare	40	– 5 6	– – 9	– 1 9½	– 8 –½	– 8 11

No. 1.—Royal Carriage Department, Woolwich Arsenal—(D.) Return of Stores Converted, &c.—*continued.*

DESCRIPTION OF ARTICLES.	Total Number delivered to Principal Superintendent of Stores.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Wheels, Flanders, wagon - -	6	4 – 11	3 16 8	2 5 –¼	10 2 7¼	11 4 4½
„ forage cart, 5 feet - -	15	5 5 2½	8 13 4	3 19 7	17 18 1½	19 16 7¼
„ hand cart - - -	20	10 5 3	15 7 10½	7 6 7¼	32 19 8¾	36 10 7½
„ spare, G. service wagon -	24	3 14 10½	2 4 –¾	1 13 11¾	7 12 11	8 9 4¼
„ „ field - -	11	5 8 5	7 17 10½	3 16 1	17 2 4½	18 19 3
„ „ siege - - -	1	– 10 11½	– 15 9	– 7 7½	1 14 4	1 18 –¼
„ „ Maltese cart - -	392	125 14 11½	98 2 8½	63 19 4½	287 17 –½	318 15 10¼
„ „ mountain battery, 7-pounder - -	24	10 4 3	6 17 8½	4 17 8½	21 19 8	24 6 11¼
„ „ stable barrow -	50	– 19 5¾	- -	– 5 6¾	1 5 –½	1 7 8¾
„ of sorts - - - -	158	62 11 9	42 15 8½	30 2 2	135 9 7½	150 – 10¼
Windlasses, 18 feet, gyn - -	1	1 19 9¾	– 5 2	– 12 10¼	2 17 10	3 4 –½
„ sling cart or wagon -	3	4 8 8¾	– 11 5½	1 8 7½	6 8 9¾	7 2 7¾
Total - - - £.		22,234 16 –½	18,698 16 10¾	11,695 16 11¾	52,629 9 11	58,286 8 9½

H. Clerk, Colonel, R.A.,
Superintendent, Royal Carriage Department.

Examined,
James C. Hurst,
Accountant, and Auditor to the Manufacturing Departments.

(E.)—RETURN showing the Additions made to Plant in the Department during the Year 1867-8.

DESCRIPTION OF ARTICLES.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Connecting new steam boilers with new steam hammers and new scrap furnaces - - - -	47 5 9	5 9 11	15 1 7¾	67 17 3¾	75 3 2¼
Fitting up and fixing new engines -	64 19 4	13 14 5	22 9 8	101 3 5	112 – 11
Fixing new machines - - -	288 1 3¾	130 17 –¼	119 13 11	538 12 3	596 10 1½
Fixing new steam hammers - -	83 8 10¼	33 15 8½	33 9 10¾	150 14 5½	166 18 5¾
Fixing new scrap furnaces and boilers - - - - -	283 5 11	279 11 10¾	160 16 8	723 14 5¾	801 10 3½
Total - - - £.	767 1 2	463 8 11½	351 11 9½	1,582 1 11	1,752 3 –

H. Clerk, Colonel, R.A.,
Superintendent, Royal Carriage Department.

Examined,
James C. Hurst,
Accountant, and Auditor to the Manufacturing Departments.

No. 1.—Royal Carriage Department, Woolwich Arsenal—*continued.*

STATEMENT (F.)—CAPITAL ACCOUNT of the Royal Carriage Department for the Year 1867-8.

Dr.

	£. s. d.	£. s. d.
To Balance:		
For Net Amount of Capital on 1st April 1867, viz.:		
Land - - - - - - - - -	5,602 3 9	
Buildings - - - - - - -	80,124 3 3¼	
Machinery - - - - - - -	54,738 13 5¼	
		140,465 - 5½
To Army Supplies, 1867-8:		
For Amount Expended during the Year, viz.:		
Buildings - - - - - - - -	8,467 8 11½	
Machinery - - - - - - - -	4,358 11 4	
		12,826 - 3½
To Sundry Departments:		
For Machinery Received - - - - -	- - -	107 10 -
To Production, 1867-8:		
For Machinery added in the Department during the Year - - - - - - - -	- - -	1,582 1 11
Total - - - £		154,980 12 8

Cr.

	£. s. d.	£. s. d.
By Production:		
For one Year's Depreciation on Plant, &c., viz.: 5 per Cent. on Buildings (80,124 *l.* 3 *s.* 3¼ *d.*, per contra) - - - - - - -	4,006 4 2	
10 per Cent. on Machinery (54,738 *l.* 13 *s.* 5¼ *d.*, per contra) - - - - - - -	5,473 17 4	
		9,480 1 6
By Balance:		
For Net Amount of Capital on 31st March 1868, viz.:		
Lands - - - - - - - -	5,602 3 9	
Buildings - - - - - - -	84,585 8 -¾	
Machinery - - - - - - -	55,312 19 4¼	
		145,500 11 2
Total - - - £.		154,980 12 8

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

H. Clerk, Colonel, R.A.,
Superintendent.

— No. 2. —

ROYAL GUN FACTORIES, WOOLWICH ARSENAL.

(A.)—BALANCE SHEET (No. 1) of the ROYAL GUN FACTORIES, ROYAL ARSENAL, WOOLWICH, 1867–8.

Dr.

	£. s. d.	£. s. d.
To Balance:		
For Stores in Stock on 1st April 1867 - - - - - -	76,293 9 8	
For semi-manufactured Articles in Stock on 1st April 1867 - -	80,731 5 –	157,024 14 8
To Army Supplies, 1867–8:		
For Cash advanced through the Paymaster General, and expended on the following Services during the Year:		
Salaries - - - - -	5,212 19 10	
Military Pay of Officers - -	729 – –	
Wages - - - - - -	90,852 11 11	
Wages of Men invalided on Medical Certificate - -	1,552 14 4½	
Stores, Materials, &c. - -	114,978 11 10	
Miscellaneous Services - -	361 3 6	
Gas - - - - - -	2,144 1 3	
Repairs to Gas Fittings - -	458 1 10	
Water - - - - -	225 – –	
Police - - - - -	1,417 3 –	
Military Horses, Carts, &c. -	1,780 3 6½	
Divine Service - - -	89 19 6	
Medical Department - -	487 1 6	
Works Department:		
R. G. F. - - - - -	685 10 –	
Proof - - - - - -	95 10 –	
Chemical Department - -	150 – –	
Library - - - - - -	16 12 9¾	
Schools - - - - - -	12 4 11	
New Buildings:		
R. G. F. - - - - -	10,647 15 1	
Proof - - - - - -	346 1 11	
Repairs to Buildings:		
R. G. F. - - - - -	5,838 16 11	
Proof - - - - - -	814 7 11	
New Machinery - - -	12,410 9 –	
Repairs to Machinery - -	7 10 –	
Superannuations - - -	1,502 – 9	
Gratuities to Workmen - -	39 4 11	252,854 16 3¾
To Miscellaneous Services:		
For Amount not defrayed out of Army Supplies:		
Stationery - - - - -	580 4 8	
Rental of Quarters - - -	155 – –	
Rates - - - - - -	400 – –	1,135 4 8
To Sundry Departments:		
For value of Stores received from various sources during the Year -	28,516 3 10¾	
For Value of Machinery received from various sources:		
R. G. F. - - - - -	15 – –	
Proof - - - - - -	50 – –	
For Work performed by other Departments - - - -	8 14 7½	28,589 18 6¼
	£.	439,604 14 2

Cr.

	£. s. d.	£. s. d.
By Balance:		
For Stores in Stock on 31st March 1868 - - - - - -	49,683 13 6¼	
For semi-manufactured Articles in Stock on 31st March 1868 -	69,860 17 7¼	119,544 11 1½
By Capital Account:		
For New Buildings added during the Year:		
R. G. F. - - - - -	10,647 15 1	
Proof - - - - - -	346 1 11	
For New Machinery added during the Year:		
R. G. F. - - - - -	12,425 9 –	
Proof - - - - - -	50 – –	23,469 6 –
By Production Account:		
For Manufacturing various natures of Breech and Muzzle-loading rifled Guns during the Year, as per Statement (C.) - - -	221,676 17 8¾	
For Manufacturing Fittings and Spare Articles, &c., for various Guns during the Year, as per Statement (D.) - - - -	24,906 11 11¾	
For Miscellaneous Services performed during the Year, as per Statement (E.) - - - -	39,179 2 3¾	
For Manufacturing Fittings and Spare Articles for Smooth Bore Guns during the Year, as per Statement (F.) - - - -	3,406 3 11	
For Additions to the Plant of the Department during the Year, as per Statement (G.) - - -	6,547 18 11¼	295,716 14 10½
By Sundry Departments:		
For Value of Stores issued to various Departments during the Year - - - - - -	- - -	874 2 2
	£.	439,604 14 2

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

F. A. Campbell, Colonel, R.A.,
Superintendent.

No. 2.—Royal Gun Factories, Woolwich Arsenal—*continued.*

(B.)—BALANCE SHEET (No. 2) of the Royal Gun Factories, Royal Arsenal, Woolwich, 1867-8.

Dr.

	£. s. d.	£. s. d.
To Balance:		
For Stores in Stock on 1st April 1867 -	76,293 9 8	
For semi-manufactured Articles in Stock on 1st April 1867 - - - - - -	80,731 5 -	157,024 14 8
To Army Supplies, 1867-8:		
For Cash advanced through the Paymaster General, and expended on the following Services during the Year:		
Salaries - - - - - -	5,212 19 10	
Military Pay of Officers - - -	729 - -	
Wages - - - - - - -	90,852 11 11	
Wages of Men invalided on Medical Certificate - - - - - -	1,552 14 4½	
Stores, Materials, &c. - - - -	114,978 11 10	
Miscellaneous Services - - - -	361 3 6	
Gas - - - - - - - -	2,144 1 3	
Repairs to Gas Fittings - - -	458 1 10	
Water - - - - - - - -	225 - -	
Police - - - - - - - -	1,417 3 -	
Military Horses, Carts, &c. - - -	1,780 3 6½	
Divine Service - - - - -	89 19 6	
Medical Department - - - -	487 1 6	
Works Department (R. G. F.) - -	685 10 -	
Works Department (Proof) - - -	95 10 -	
Chemical Department - - - -	150 - -	
Library - - - - - - -	16 12 9¾	
Schools - - - - - - -	12 4 11	
New Buildings (R. G. F.) - - -	10,647 15 1	
New Buildings (Proof) - - - -	346 1 11	
Repairs to Buildings (R. G. F.) - -	5,838 16 11	
Repairs to Buildings (Proof) - -	814 7 11	
New Machinery - - - - -	12,410 9 -	
Repairs to Machinery - - - -	7 10 -	
Superannuations - - - - -	1,502 - 9	
Gratuities to Workmen - - - -	39 4 11	252,854 16 3¾
To One Year's Interest at 3½ per Cent. on Invested Capital, viz.—		
Stores and semi-manufactured Articles in Stock on 1st April 1867 - - - - - - £. 157,024 14 8½		
Land - - - - - - £. 2,805 9 4		
Buildings - - - - - £. 87,356 16 -		
Machinery - - - - - £. 154,839 7 3		
£. 402,026 7 3½	14,070 18 3¾	
To One Year's Interest at 3½ per Cent. on Working Capital, viz., one-fifth of Annual Expenditure - - - - - - -	1,978 1 2	
To Depreciation, 5 per Cent. on Buildings, and 10 per Cent. on Machinery, as per Capital Account - - - - - - - -	19,851 15 7¼	35,900 15 1
To Miscellaneous Services:		
For Amount not defrayed out of Army Supplies:		
Stationery - - - - - - -	580 4 8	
Rental of Quarters - - - -	155 - -	
Rates - - - - - - - -	400 - -	1,135 4 8
To Sundry Departments:		
For Value of Stores received from various Sources - - - - - - - -	28,516 3 10¾	
For Value of Machinery received from various sources (R. G. F.) - - - - - -	15 - -	
For Value of Machinery received from various sources (Proof) - - - - - -	50 - -	
For Work performed by other Departments -	8 14 7½	28,589 18 6¼
	£.	475,505 9 3

Cr.

	£. s. d.	£. s. d.
By Balance:		
For Stores in Stock on 31st March 1868 - - - - - -	49,683 13 6¼	
For semi-manufactured Articles in Stock on 31st March 1868 - -	69,860 17 7¼	119,544 11 1½
By Capital Account:		
For New Buildings added during the Year (R. G. F.) - - -	10,647 15 1	
For New Buildings added during the Year (Proof) - - -	346 1 11	
For New Machinery added during the Year (R. G. F.) - - -	12,425 9 -	
For New Machinery added during the Year (Proof) - - -	50 - -	23,469 6 -
By Production Account:		
For Manufacturing various natures of Breech and Muzzle Loading Rifled Guns during the Year, as per Statement (C.) - - - -	248,311 5 3¾	
For Manufacturing Fittings and Spare Articles, &c., for various Guns during the Year, as per Statement (D.) - - - -	27,899 1 1¾	
For Miscellaneous Services performed during the Year, as per Statement (E.) - - - -	44,257 1 2¾	
For Manufacturing Fittings and Spare Articles for Smooth-bore Guns during the Year, as per Statement (F.) - - - -	3,815 8 10	
For additions to the Plant of the Department during the Year, as per Statement (G.) - - -	7,334 13 5¼	331,617 9 11½
By Sundry Departments:		
For Value of Stores issued to various Departments during the Year -	- - -	874 2 2
	£.	475,505 9 3

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

F. A. Campbell, Colonel, R.A.,
Superintendent.

No. 2.—Royal Gun Factories, Woolwich Arsenal—*continued.*

STATEMENT (C.)—Manufacturing various Natures of Breech and Muzzle Loading Guns (R.) during the Year 1867–8, including Vents, Vent Pieces, Breech Screws, &c. &c. &c.

Number of Order.	AUTHORITY.	DESCRIPTION.	Number Made.	Labour.	Material.	General Expenses.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		Manufacturing 515 Wrought-iron Breech and Muzzle Loading Guns of various natures:		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
1	22 Mar. 1866 (G—39—213)	12-inch wrought-iron M. L. R. 23-ton guns - - - - - Service C.	2	1,163 8 10¾	2,914 13 1	505 16 3	4,583 18 2¾	5,134 13 1¾
12	16 Mar. 1867 (G—45—54)	12-inch " " " - - - - - - F. "	1	370 – 3	1,244 17 11½	157 12 8	1,772 10 10½	1,985 10 2½
2	14 May 1866 (G—32—373)	9-inch " " 12-ton guns - - - - S. "	40	8,631 18 3½	26,466 16 8½	4,070 2 7	39,168 17 7	43,874 18 4
3	15 Mar. 1867 (G—45—54)	9-inch " " " - - - - - - F. "	38	5,669 10 5	20,954 14 1	2,903 – 10	29,527 5 4	33,074 17 10
659	10 Aug. 1864 (G—39—430)	9-inch " " " (Experimental) F. "	2	345 19 3	829 16 3¼	155 11 –	1,331 6 6¼	1,491 5 7¾
660	10 Aug. 1864 (G—32—516)	9-inch " " " (Experimental) F. "	2	409 8 8½	1,091 14 2	194 2 8	1,695 5 6½	1.898 19 2½
4	15 Mar. 1867 (G—45—54)	8-inch " " 9-ton guns - - - - F. "	2	258 13 4¾	786 5 2½	136 2 3	1,181 – 10¼	1,322 18 10¼
5	6 July 1866 (G—32—434)	7-inch " " 7-ton guns - - - - S. "	3	584 13 3	1,434 6 11	251 7 4	2,270 7 6	2,543 8 1
7	15 Mar. 1867 (G—45—54)	7-inch " " " - - - - - - F. "	12	1,211 4 8¾	3,726 1 10¼	621 7 2	5,558 13 9	6,226 11 –
6	12 Sept. 1866 (G—39—406)	7-inch " " 6½ ton guns - - - S. "	46	7,728 17 4½	17,303 8 –¾	3,618 1 8	28,650 7 1¼	32,092 12 4¼
13	15 Mar. 1867 (G—45—54)	7-inch " " " - - - - - - F. "	178	17,646 12 –¼	49,731 17 10	9,037 15 –	76,416 4 10¼	85,597 9 2¼
10	18 July 1866 (G—39—345)	64-pounder " " 64 cwt. B. Pattern - F. "	1	67 14 1	118 19 2	29 5 –	215 18 3	241 17 1
11	18 Aug. 1866 (G—32—470)	64-pounder " " " D. Pattern - F. "	96	6,215 11 11½	12,139 4 10½	3,015 19 5	21,370 16 3	23,938 9 2
527	20 Feb. 1867 (G—48—29)	12-pounder " " 8 cwt. guns - - - F. "	3	106 4 5	136 9 8¾	54 9 10	297 3 11¾	332 18 1¾
729	22 Aug. 1867 (G—48—87)	7-pounder steel - - " 150 lbs. " - - - - - -	12	267 12 8½	159 18 11	135 19 9	563 11 4½	631 5 7½
559	6 Nov. 1867 (G—45—214)	7-pounder steel - - " " " - - - - - -	1	13 12 3¾	13 7 –½	6 19 8	33 19 –¼	38 – 7¼
9	18 April 1866 (G—32—342)	40-pounder wrought-iron B.L.R. 35 cwt. " - - - - - -	4	231 – –¼	399 15 5¾	103 14 8	734 10 2	822 15 2
707	29 Mar. 1867 (G—45—64)	12-pounder " " 8 cwt. " - - - - - -	3	80 15 9	90 5 8	41 7 6	212 8 11	237 19 5
724	11 May 1867 (G—45—95)	12-pounder " " 8 cwt. " - - - - - -	24	646 5 9	722 5 2¾	331 – 4	1,699 11 3¾	1,903 15 3¾
707	29 Mar. 1867 (G—45—64)	9-pounder " " 6 cwt. " - - - - - -	6	144 9 –	157 3 2	74 10 2	376 2 4	421 6 1
741	14 Dec. 1867 (G—48—168)	9 pounder " " 6 cwt. " - - - - - -	6	144 9 –	157 3 2	74 10 2	376 2 4	421 6 1
15	15 Mar. 1867 (G—45—54)	9-pounder " " 6 cwt. " - - - - - -	25	601 17 4	654 16 8¾	306 5 6	1,562 19 6¾	1,750 15 3¾
18	18 June 1867 (G—48—55)	6-pounder " " 3 cwt. " - - - - - -	6	139 9 1	145 – 2	71 8 8	355 17 11	398 13 1
712	- - - - -	9-inch wrought-iron M. L. R. 12-ton guns (Australia) - - -	2	400 3 7	1,116 8 9	205 5 10	1,721 18 2	1,929 5 5
		Total - - -	515	53,079 11 7	142,495 10 2¾	26,101 15 11	221,676 17 8¾	248,311 5 3¾

Examined,
James C. Hurst,
Accountant, and Auditor to Manufacturing Departments.

STATEMENT (D.)—Manufacture of Fittings and Spare Articles for various Guns, 1867-8.

	£.	s.	d.
Labour	14,028	12	5
Material	3,934	14	2¾
Indirect Expenses	6,943	5	4
Total, Balance Sheet, No. 1 £.	24,906	11	11¾
Total, Balance Sheet, No. 2 £.	27,899	1	1¾

Number of Order.	AUTHORITY.	DESCRIPTION.	Number Made.	Labour. £.	s.	d.	Material. £.	s.	d.	General Expenses. £.	s.	d.	TOTAL COST per Balance Sheet, No. 1. £.	s.	d.	TOTAL COST per Balance Sheet, No. 2. £.	s.	d.
37	21 June 1865 - - -	Packing, guns, vent-pieces, special tools, facing implements, and small stores, &c., for issue by the Principal Superintendent of Stores.		370	12	9	78	15	1¾	190	2	8	639	10	6¾	716	7	3¾
		Sighting and finishing, *after proof*, various natures of wrought-iron guns, including the manufacture of sights, gauges, tools, &c.:																
38	(G—45—73; 73—3—1700) -	12-inch W. I. M. L. 23-ton gun, R. - - - - -	1	25	6	8	5	4	5¼	11	19	1	42	10	2¼	47	12	4¼
39	10 Sept. 1867 - - -	9-inch " 12-ton " - - - - -	83	1,484	4	–¼	354	11	6¼	734	5	1	2,573	–	7½	2,882	3	6½
41	15 Oct. 1867 (G) - -	8-inch " 12-ton " - - - - -	5	88	19	9½	25	13	4¼	43	13	7	158	6	8¾	177	7	1¾
42	15 Oct. 1867 (G—48—116)	7-inch " 7-ton " - - - - -	27	472	3	9¼	115	5	7½	215	15	11	803	5	3¾	899	15	6¾
43	15 Oct. 1867 - - -	7-inch " 6½-ton gun, R.S.S. - -	203	3,186	–	–¾	731	8	3	1,609	2	6	5,526	10	9¾	6,190	10	11¾
44	1 Feb. 1867 (G—48—84) -	64-pounder, M. L. 64-cwt. " " - - -	164	1,585	7	–	306	–	6	770	8	4	2,661	15	10	2,981	12	–
45	21 Feb. 1860 (G—24—297)	64-pounder, B.L. wedge, 61-cwt. " " - - -	5	58	8	9¼	18	9	3½	29	5	7	106	3	7¾	118	18	9¾
49	30 Aug. 1866 (G—32—491)	40-pounder " 35-cwt. " " - - -	54	637	15	–½	85	–	6½	302	8	2	1,025	3	9	1,148	7	2
51	9 Jan. 1868 (G—48—168)	9-pounder " - - " - - -	25	224	12	8	32	11	2¾	112	5	10	369	9	8¾	413	17	6¾
52	10 Aug. 1868 - - -	6-pounder " - - " - - -	6	59	5	9¼	6	6	8¾	28	11	5	94	3	11	105	10	3
		Manufacturing various natures of gun fittings, for store, to meet demands, including tools, alteration to plant, &c., but exclusive of those made for and charged to the guns:																
60	15 Mar. 1867 (G—45—58; 73—3—8001).	Vent-pieces - - - - - - - - - - - - - - - 20-pounder - -	250	451	6	6	392	2	–	231	11	–	1,074	19	6	1,204	2	7
62	15 Mar. 1867 (G—48—97; 73—3—8001).	Vent-pieces - - - - - - - - - - - - - - - 6-pounder - -	41	55	–	7½	20	10	7	27	4	11	102	16	1½	115	3	2½
66	15 Mar. 1867 (G—45—58; 73—3—8001).	Rings, copper, vent-piece - - - - - - - - - - - - - 12 and 9-pounders -	328	23	5	1½	38	–	11½	11	18	8	73	4	9	82	–	9
67	15 Mar. 1867 (G—45—58; 73—3—8001).	Rings, copper, vent-piece - - - - - - - - - - - - - 6-pounder - -	20	1	7	8½	2	3	7½	–	14	3	4	5	7	4	15	10
78	9 Jan. 1868 (G—45—64; 45—94; 45—54; 48—168).	Tappets for breech screws, 6, 9, and 12-pounders -	11	6	17	3¼	1	3	10	3	7	5	11	8	6¼	12	15	11¼
82	(G—38—455; 45—74; 39—442).	Breech screws, 40-pounder - - - - - -	8	16	15	5¼	96	1	1½	8	1	–	120	17	6¾	135	7	11¾

No. 2.—Royal Gun Factories, Woolwich Arsenal—Statement (D.) Manufacture of Fittings and Spare Articles for various Guns—*continued.*

Number of Order.	AUTHORITY.	DESCRIPTION.	Number Made.	Labour.	Material.	General Expenses.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
				£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
		Manufacturing various natures of gun fittings, for store, to meet demands, including tools, alteration of plant, &c., but exclusive of those made for and charged to the guns:						
83	10 Mar. 1865 (32—27)	Breech screws, 20-pounder	1	1 14 6	6 18 –	– 15 10	9 8 4	10 11 –
85	(G 48—55; 45—74)	Breech screws, 6-pounder	1	1 1 –½	2 9 8	– 10 9	4 1 5½	4 11 2½
87	(G—32—27; 39—32)	Pins, keep — 7-inch	19	1 3 9	– 13 6¾	– 12 2	2 9 5¾	2 15 4¾
88	18 April 1866 (G—32—342)	Pins, keep — 40-pounder	114	5 4 2	3 1 7¾	2 13 5	10 19 2¾	12 5 6¾
91	15 Mar. 1867 (G—39—550; 73—3—8001).	Pins, keep — 6-pounder	20	– 16 8	– 1 3½	– 8 5	1 6 4½	1 9 6½
94		Bushes, breech, iron, 7-inch B.L.	28	13 17 3	9 16 –	6 2 2	29 15 5	33 6 11
97	6 Jan. 1868 (G—48—159)	Bushes, breech, copper — 40-pounder	158	24 6 9	22 6 1	12 1 7	58 14 5	65 15 6
98	6 Jan. 1868 (G—48—159)	Bushes, breech, copper — 20-pounder	53	5 3 4	3 19 9	2 13 –	11 16 1	13 4 5
99	9 Jan. 1868 (G—48—158)	Bushes, breech, copper — 9 and 12-pounders	181	23 11 5	24 6 5¼	11 18 11	59 16 9¼	67 – 6¼
100	15 Mar. 1867 (G—45—58; 73—3—8001).	Bushes, breech, copper — 6 pounder	65	3 13 9	4 13 2	1 17 10	10 4 9	11 9 4
115	9 Jan. 1868 (G—45—64; 45—54; 45—95; 48—168).	Copper handles, 6, 12, or 9-pounders	265	63 12 –	23 4 6¼	29 19 7	116 16 1¼	130 16 9¼
114	2 April 1864 (G—27—180; 73—3—5236).	Rings, iron, for breech tangent sights — 40-pounder	69	262 11 6	34 16 2	116 6 8	413 14 4	463 8 6
117		Rings, iron, for breech tangent sights — 20-pounder	46	139 2 3	20 1 4¾	71 7 4	230 10 11¾	258 4 11¾
126	(G—48—55)	Rings, iron, for breech tangent sights — 6-pounder	2	8 11 –½	– 18 6	3 18 10	13 8 4½	15 – 7½
127	(G—48—55)	Eyes for copper handles	100	5 – –	5 – 9½	2 11 4	12 12 1½	14 2 4½
109	10 Mar. 1865 (G—32—27)	Sights, B. T., old pattern, various	75	158 – 9	14 5 4	73 15 4	246 1 5	275 12 9
120		Sight rings for 12-pounder B. L. guns	3	6 12 –	– 8 6	3 1 –	10 1 6	11 5 9
119	9 Jan. 1868 (G—45—64; 45—54; 45—95; 48—168).	Sights, trunnion, 12, 9, and 6-pounders	244	46 16 1	15 2 3	23 5 10	85 4 2	95 8 11
146	12 Sept. 1866 (G—39—406; 73—3—7665).	Sights, trunnion and centre	1,216	566 13 1	148 2 3	273 9 4	988 4 8	1,106 19 4
142		Clamps, moveable, for wood scales	401	105 5 –	12 15 –	53 19 11	171 19 11	192 13 3
144	5 April 1867 (G—39—554; 73—3—8006).	Sights, breech tangent, various	407	262 4 2	75 2 7¾	129 15 5	467 2 2¾	523 4 7¾
145	12 Sept. 1866 (G—39—406; 73—3—7665).	Sights, centre, hind; Sockets „ „	260	107 5 –	9 17 8	53 10 11	170 13 7	191 3 9
147	12 Sept. 1866 (G—39—406; 73—3—7665).	Sockets for breech tangent sights	11	2 – 3¼	1 3 7	1 – –	4 3 10¼	4 13 11¼
148	5 Apr. 1867 (G—39—554; 73—3—8006).	Sights, breech tangent	531	648 17 4¼	104 14 6¾	310 4 1	1,063 16 –	1,191 12 3
149	17 Jan. 1868 (G—48—185; 57—Portsmouth—2902).	Sights, hind turrets	2	2 11 2¼	1 2 5½	1 6 3	4 19 10¾	5 11 10¾
150	17 Jan. 1868 (G—48—185; 57—Portsmouth—2902).	Sights, trunnion and centre turrets	2	1 16 6¼	1 11 11½	– 18 9	4 7 2¾	4 17 8¾

155	15 Mar. 1867 (G—39—550; 45—58).	Scales, tangent, wood, for W. I. and C. I. guns	753	94	15	2¼	66	1	6¾	48	8	4	209	5	1	234	7	11
		Buckles for ditto																
161	(G—45—64; 45—54; 45—95)	Eyes, elevating, complete	22	7	17	3½	1	15	–½	4	–	8	13	13	–	15	5	10
		Pins, keep, for elevating eyes	104	14	14	8	1	6	–	7	2	6	23	3	2	25	18	10
168	11 April 1867 (G—45—72)	Wrenches for pivots	27	7	13	6½	–	19	7½	3	18	11	12	12	1	14	2	4
170	25 July 1867 (G—45—150; 57—2—15,839).	Pivots for 9 and 7-inch M. L. guns	36	25	9	6½	32	7	6	11	13	6	69	10	6½	77	17	7½
		Screws, fixing plate																
		Pins, keep																
173	14 Sept. 1867	Screws for fixing patches	275	4	12	–¾	1	7	11½	2	7	3	8	7	3¼	9	7	4¼
174		Screws for fixing crutch, preserving	628	3	3	3	–	13	2½	1	11	9	5	8	2½	6	1	3½
175	10 July 1867 (G—48—54; 87—G—No. 121).	Screws preserving	1,984	34	9	7¾	2	18	3¾	17	–	7	54	8	6½	60	19	4½
176	15 Mar. 1867 (G—39—550; 73—3—8001).	Plates, guide, various	1,044	140	18	2½	12	13	8	71	16	1	225	7	11½	252	9	7½
186		Bearers, shot, for 9-inch M. L. guns	180	362	19	10¾	79	5	9	186	4	4	628	9	11¾	704	–	2¾
187		Ditto 7-inch M. L. guns	60	62	12	8¾	16	5	8	31	19	–	110	17	4¾	124	3	9¾
188	12 Nov. 1867 (G—48—135)	Wrenches for pins, friction tube	262	28	9	4	4	2	9¼	13	6	9	45	18	10½	51	9	3½
189	6 Jan. 1868 (G—48—159)	Pins, friction tube	510	8	11	6½	1	13	10	4	5	2	14	10	6½	16	5	5½
190		Bearers, shot, for 7-inch B. L. guns	3	1	4	5	–	9	3	–	10	5	2	4	1	2	9	5
191	(G—45—118; 73—3—8001)	Extractors, tin cup, 7-inch B. L. guns, S.S.	85	30	3	9½	3	6	–½	15	9	9	48	19	7	54	17	3
192	(G—45—118; 73—3—8001)	Ditto ditto L.S.	50	4	9	5	1	16	1¼	2	5	10	8	11	4¼	9	11	11¼
193	15 Mar. 1867 (G—39—550; 73—3—8001).	Levers, releasing, vent-pieces	88	14	6	8	5	9	5	7	7	–	27	3	1	30	8	4
195	(G—45—118; 73—3—8001)	Wrenches, iron, for breech tangent sights for turrets	6	6	12	9½	–	18	9½	3	8	1	10	19	8	12	6	1
198	15 Mar. 1867 (G—45—58; 73—3—8001).	Instruments, sighting, for breech-loading guns — 40-pounders	2	6	19	11½	1	9	3¾	3	11	9	12	1	–¼	13	10	–¼
199	15 Mar. 1867 (G—45—58; 73—3—8001).	20 „	1	2	16	10	–	10	10½	1	9	2	4	16	10½	5	8	6½
200	15 Mar. 1867 (G—45—58; 73—3—8001).	12 and 9 pounders	3	7	9	8	1	8	6½	3	16	9	12	14	11½	14	5	7½
201	15 Mar. 1867 (G—45—58; 73—3—8001).	6-pounders	1	2	1	–¼	–	6	7¾	1	1	–	3	8	8	3	16	11
211	15 Mar. 1867 (G—45—58; 73—3—8001).	Stoppers, breech, for breech-loading wedge guns — 64-pounders	17	76	8	8	58	10	11½	39	4	2	174	3	9½	195	2	4½
212		40 „	6	22	4	5	12	19	1	11	7	11	46	11	5	52	2	10
224	20 Feb. 1867 (G—48—27; 85—G No.—1005).	Wood, instruction sights, 12-pounder B.L.	7	31	5	2	10	2	9	16	–	8	57	8	7	64	6	7
225	2 April 1867 (G—45—68; 57—2—15,216).	Wrenches for sights, turret ships	3	3	14	8	–	8	7½	1	18	3	6	1	6½	6	16	1½
223		Collars, leather, for 12-pounder, B. screws	42	1	1	–	–	15	9	–	10	–	2	6	9	2	12	4
230	15 Mar. 1867 (G—48—97; 73—3—8001).	Bits, vent, 12-pounder	150	16	–	1½	1	3	8¾	8	4	3	25	8	1¼	28	9	1¼
232		Indicator rings — 7-inch B. L. guns	108	57	6	5¼	16	13	8½	29	2	4	103	2	5¾	115	10	3¾
233		40-pounder B. L. guns	84	24	9	7	8	5	3¼	11	5	11	44	–	9¼	49	6	7¼

No. 2.—Royal Gun Factories, Woolwich Arsenal—Statement (D.) Manufacture of Fittings and Spare Articles for various Guns—*continued.*

Number of Order.	AUTHORITY.	DESCRIPTION.	Number Made.	Labour.	Material.	General Expenses.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
				£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
		Re-sighting various natures of breech-loading guns, including the preparation of tools, &c.:						
239	12 Mar. 1866 - - -	7-inch 82 cwt. - - - - - - - -	96	574 17 11¾	46 2 –	294 18 5	915 18 4¾	1,025 19 3¾
240	- - - - - - 2 July 1866 - - -	40-pounder, 35 cwt. - - - - - - -	37	156 13 5	38 – 6¾	80 7 5	275 1 4¾	308 2 4¾
241	- - - - - -	40-pounder, 32 cwt. - - - - - - -	22	64 6 9½	3 18 7¾	33 – 1	101 5 6¼	113 8 10¼
242	- - - - - -	20-pounder - - - - - - - - -	41	122 13 8	24 7 10	62 18 9	210 – 3	235 4 11
243	- - - - - - 21 April 1864 - - -	12-pounder - - - - - - - - -	41	104 1 6½	13 16 1½	53 7 10	171 5 6	191 17 1
244	- - - - - -	9-pounder - - - - - - - - -	5	19 10 10	– 6 11½	10 – 5	29 18 2½	33 10 –½
245	- - - - - -	6-pounder - - - - - - - - -	5	15 7 3	– 4 7	7 17 7	23 9 5	26 5 9
246	- - - - - -	Alteration to 7-inch and 40-pounder indicator rings - -	33	17 13 6¼	1 19 9¾	9 1 4	28 14 8	32 3 8
248	- - - - - -	Repairing 7-inch 82 cwt. breech-loading guns - - -	3	17 19 –	147 2 1¼	9 4 2	174 5 3¼	195 4 –¼
250	(G—48—40; 45—138) - -	Repairing 20-pounder breech-loading gun with 1 A. tube -	1	8 16 8	13 – 2½	4 10 7	26 7 5½	29 10 9½
251	5 Mar. 1868 (G—48—40) -	Repairing 12-pounder breech-loading guns with 1 A. tube -	1	6 – 10	11 11 10¼	3 2 –	20 14 8¼	23 4 6¼
253	4 Dec. 1867 (G—45—231) -	Altering chambers of 12-inch, 7-inch, and 9-inch muzzle-loading guns.	84	71 18 –	26 12 1½	36 17 8	135 7 9½	151 13 1½
226	18 Sept. 1863 - - -	Guns, 12-pounder L. S., altered to sealed pattern - - -	10	225 5 1	344 18 4¾	115 11 1	685 14 6¾	768 2 4¾
227	18 Sept. 1863 - - -	Breech screws for ditto - - - - - - -	9	13 18 9	36 – –	8 7 10	58 6 7	65 6 9
229	18 Sept. 1863 - - -	Breech tangent sights for ditto - - - - - -	81	289 7 9	24 5 4	134 12 –	448 5 1	502 2 4
		Totals - - - £.		14,028 12 5	3,934 14 2¾	6,943 5 4	24,906 11 11¾	27,899 1 1¾

Examined,
James C. Hurst,
Accountant, and Auditor to Manufacturing Departments.

No. 2.—Royal Gun Factories, Woolwich Arsenal—*continued.*

STATEMENT (E.)—MISCELLANEOUS SERVICES.

	£.	s.	d.
Labour	9,885	18	7¾
Material	23,281	9	10
Indirect Expenses	6,011	13	10
Total Balance Sheet, No. 1 £.	39,179	2	3¾
Total Balance Sheet, No. 2 £.	44,257	1	2¾

Number of Order.	AUTHORITY.	DESCRIPTION.	Labour.	Material.	General Expenses.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
275	20 February 1867 (G. 39—548; 57—G. N.—1005.)	Making three breech tangent sights, and one centre hind sight, for sealing as patterns, to govern the future manufacture of the same; including moulding, casting, and trimming cross heads, leaves, and stud, forging sight bars, turning, fitting, bronzing, and engraving the whole complete.	4 18 11¼	- 7 11½	2 10 9	7 17 7¾	8 16 6¾
294	24 June 1867 (G. 48—1; 73—3—8028.)	Manufacturing fittings for 7, 8, and 9-inch wrought-iron muzzle-loading guns, R., for Portsmouth and Devonport, for sealing as patterns; including two pins, keep, for elevating patch; two pivots, steel; twelve plates, metal, for elevating racks, and two screws, fixing, for elevating plates.	4 8 6	10 8 4	2 5 5	17 2 3	19 3 4
301	13 February 1861 (G. 45—105; 57—Woolwich—3156.)	Repairing and completing various natures of sights, as follows:—56 trunnion for 7-inch breech-loading guns; four hind, five fore, and ten trunnion for 9-inch; four trunnion for 8-inch; one centre, and 20 trunnion for 7-inch; nine fore, nine hind, and 24 trunnion for 64-pounder muzzle-loading guns.	22 12 6	- 7 11½	11 12 1	34 12 6½	38 15 8½
304	1 June 1867 (G. 48—28; 57—2—15,563.)	Graduating three centre hind, and six breech tangent sights for 9-inch muzzle-loading guns, R., for Portsmouth.	1 10 3	- -	- 15 6	2 5 9	2 11 3
305	13 February 1861 (G. 45—114; 57—Woolwich—3156.)	Repairing, fitting, and adjusting vent and sights of 8-inch muzzle-loading shunt gun, Experimental No. 243; lining and adjusting sights of seven 12-pounder breech-loading guns; repairing three 7-inch vent-pieces, and 20 12-pounders; making complete 14 12-pounder copper vent-rings.	12 19 10¼	3 4 3	6 13 10	22 17 11¼	25 12 11¼

No. 2.—Royal Gun Factories, Woolwich Arsenal—Statement (E.) Miscellaneous Services—*continued.*

Number of Order.	AUTHORITY.	DESCRIPTION.	Labour.	Material.	General Expenses.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
307	18 May 1867 - - - - (G. 45—116; 57—Woolwich—2690.)	Stamping and completing stores for Portsmouth as follows:—26 fore and 20 hind sights, for various natures of cast-iron guns.	1 14 -	- -	- 17 5	2 11 5	2 17 7
314	13 February 1867 - - - (G. 48—43; 57—Woolwich—3156.)	Repairing and engraving scale of yards on nine breech tangent sights, and one centre hind sight, with socket.	1 9 11	- -	- 15 4	2 5 3	2 10 8
315	13 February 1861 - - (G. 48—47; 57—Woolwich—3156.)	Repairing vent-pieces, &c., as follows:—forging, bending, turning, and finishing six 7-inch shackles for vent-pieces, and nine 12-pounders; repairing three 7-inch vent-pieces, one 40-pounder, 10 20-pounders, and nine 12-pounders; making 10 20-pounder vent copper rings, three 12-pounders, and one 40-pounder.	11 6 3	1 14 9½	5 16 1	18 17 1½	21 2 5½
320	20 February 1867 - - - - (G. 45—192; 58—G. N.—1005.)	Manufacturing three punches, vent, for 7, 9, and 12, or 13-inch muzzle-loading guns, for sealing as patterns.	- 3 4½	- - 5½	- 1 9	- 5 7	- 6 3
341	13 February 1861 - - - (G. 45—187; 57—Woolwich—3156.)	Manufacturing a steel breech-bush, and fitting it to 64-pounder wedge gun, No. 13, of Elswick manufacture; fitting and adjusting the sights of the same.	1 13 8	- 12 6¼	- 17 3	3 3 5¼	3 11 -¼
412	19 February 1867 - - - G. 39—527; 85—G. N.—1012.)	Adjusting sights and preparing a 10-inch gun, muzzle-loading R., for the Turkish Government.	- 5 -	- -	- 2 7	- 7 7	- 8 6
419	13 February 1861 - - - (G. 45—48; 57—Woolwich—3156.)	Hammering and filing out the dents and bruises of 7-inch 6½-ton muzzle-loading R. gun, No 144.	- 2 6	- -	- 1 4	- 3 10	- 4 3
373	13 February 1861 - - - (G. 32—545; 57—Woolwich—3156.)	Drilling holes, fitting elevating patch, re-venting and adjusting sights of 9-inch gun, muzzle-loading R., No. 8; forging three 20-pounder levers and tappets, turning, boring, shaping, and fitting the same; repairing one 20-pounder vent-piece, making and fitting the same with new cross-head, and copper ring, &c.; also repairing four 12-pounder vent-pieces with new cross heads and copper rings.	14 1 -	18 10 3¼	6 13 7	39 4 10¼	43 19 3¼
478	9 May 1867 - - - - (G. 48—39; 59—22—9746.)	Manufacturing two steel scrapers, 2½-inches diameter, for cleaning tubes of boilers for the Military Store Department steamer, "Earl De Grey and Ripon."	2 - -	- 5 11½	1 - 6	3 6 5½	3 14 5½

319	13 February 1861 - - - (G. 45—138; 57—Woolwich—3156.)	Repairing 14 vent-pieces, as follows:—10 7-inch faced, polished, and fitted with new shackles, four 12-pounders, fitted with new cross heads, shackles, and copper rings, &c.; fitting and adjusting sights of two 7-pounder steel guns.	14 8 -	4 10 5¾	7 7 9	26 6 2¾	29 9 5¾
312	13 February 1861 - - - (G. 48—40; 57—Woolwich—3156.)	Facing and polishing 24 7-inch vent-pieces; forging, turning, and bending 44 shackles, and fitting them to the vent-pieces; facing and polishing 12 40-pounder vent-pieces; manufacturing 12 40-pounder vent copper rings, and fitting them to the vent-pieces.	28 1 6	3 3 3	14 7 7	45 12 4	51 1 11
317	13 February 1861 - - - (G. 45—137; 57—Woolwich—3156.)	Repairing wedge, stoppers, and covers, plugging tangent socket holes, drilling sight holes, and sighting (for drill purposes), two 64-pounder wedge guns, of Elswick manufacture.	20 18 10	- 2 8	10 14 11	31 16 5	35 12 11
477	9 May 1867 - - - - (G. 48—37; 57—22—9746.)	Moulding, casting, trimming, and fitting a grating to coal bunkers of War Department steam vessel "Lord Panmure."	1 6 6¼	- 3 4½	- 13 7	2 3 5¾	2 8 8¾
353	2 October 1867 - - - (G. 45—209; 58—R.—285.)	Preparing tracings of 9-inch howitzer for Mr. Richardson, of H.M.S. "Indus."	- 2 6	- - 6	- 1 4	- 4 4	- 4 10
348	12 May 1865 - - - - (G. 32—65.)	Cutting V groove through the 1 A tube of 7-inch 82 cwt. breech-loading gun.	4 7 9	- -	2 5 -	6 12 9	7 8 8
362	20 February 1867 - - - (G. 48—154; 85—Gen. No.—1005.)	Manufacturing one vent-bit 23 inches long, for guns of 23 tons and upwards; one drift vent 23 inches long, one wire priming, and one vent punch.	- 6 3½	- - 6¼	- 3 3	- 10 -¾	- 11 3¾
335	20 January 1867 - - - (G. 45—183; 85—G. N.—100.)	Forging and finishing one vent-bit, one drift, and one pricker, for sealing as patterns.	- 3 7½	- - 3½	- 1 10	- 5 9	- 6 5
322	13 February 1861 - - - (G. 45—142; 57—Woolwich—3156.)	Adjusting sights and fittings of 9-inch 6¼-ton. muzzle-loading smooth-bore gun, to sealed pattern.	2 - -	- -	1 - 6	3 - 6	3 7 9
340	23 September 1867 - - - (G. 45—188; 7678—Stores—16.)	Preparing drawings of 7-pounder steel muzzle-loading guns, R., 150 lbs., for Lieut. Nolan and Lieut. Chapman, Royal Artillery.	1 8 -	- 1 6	- 14 4	2 3 10	2 9 -
415	6 June 1864 - - - - (G. 39—533; 73—3—5347.)	Manufacturing a 12-pounder vent-piece, complete, with cross head, shackle, copper ring, &c.	1 14 2	- 16 3½	- 17 6	3 7 11½	3 16 1½
351	20 February 1867 - - - (G. 45—201; 85—G. N.—1005.)	Manufacturing three punches, vent; one 22 inches long, for guns of 18 tons and upwards; one 17 inches long, for guns of six tons, and up to 12 tons; and one 12 inches long, for garrison and naval guns of six tons and upwards.	- 6 6	- - 5¼	- 3 4	- 10 3¼	- 11 5¼
357	1 November 1867 - - - (G. 48—130.)	Manufacturing two vents, with platinum ends, and re-venting 7-inch 6½-ton gun, No. 329, for service on board H.M.S. "Excellent."	4 10 3	8 11 11¼	2 7 3	15 9 5¼	17 6 7¼

No. 2.—Royal Gun Factories, Woolwich Arsenal—Statement (E.) Miscellaneous Services—*continued.*

Number of Order.	AUTHORITY.	DESCRIPTION.	Labour.	Material.	General Expenses.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
346	13 February 1861 - - - (G. 32—498; 57—Woolwich 3156.)	Repairing two 40-pounder and one 20-pounder, W. I. breech-loading guns, R., as follows: cutting off and boring out old tube of 40-pounder, No. 259, of Elswick manufacture; coiling, welding, facing, and uniting coils to form the 1 A tube; rough and finish boring and turning the tube, and shrinking it into the gun; turning muzzle, boring, broaching, rifling, lapping, screwing for copper, coppering and finishing inside after proof. Filing flaws of 40-pounder gun, No. 570; filing flaws and removing dents and bruises of 20-pounder, No. 111. Altering 11 7-inch vent pieces, and making them in conformity with sealed pattern. Forging, turning, and bending 26 shackles, and fitting the same to 13 7-inch vent-pieces. Repairing two 40-pounder and eight 20-pounder vent-pieces, and fitting them with new copper rings.	42 18 –	38 2 2¼	18 18 4	99 18 6¼	111 18 6¼
343	13 February 1861 - - - (G. 39—419; 57—Woolwich 3156.)	Repairing two 7-inch 82 cwt. breech-loading guns, R., and 13 vent-pieces, as follows: boring out old tube and breaking out shell of 7-inch breech-loading gun, No. 324; coiling, welding, facing, and uniting together five coils to form a 1 A tube; taper boring the gun, rough and finish boring and turning the tube, and shrinking it into the gun; boring, broaching, rifling, and chambering, fitting in single bush, and finishing inside after proof. Filing up flaws in the bore of 7-inch 82 cwt. breech-loading gun, R., No. 403. Altering five 7-inch vent-pieces, and making them in conformity with sealed patterns. Forging, turning, and bending 16 shackles, and fitting them to eight 7-inch vent-pieces.	34 12 11	45 11 9½	16 11 2	96 15 10½	108 8 2½
361	13 February 1861 - - - (G. 45—227.)	Filing bruises on the trunnions of three 9-inch guns, Nos. 108, 115, and 121, these guns having been dropped in transit, through the chain breaking.	– 9 4	– –	– 4 10	– 14 2	– 15 10
420	14 March 1867 - - - (G. 39—541; 73—3—7986.)	Manufacturing two sets of sighting instruments for 7-inch and 9-inch W. I. muzzle-loading guns, R., for duplicate patterns.	9 14 8	4 2 4¼	4 19 9	18 16 9¼	21 1 11¼
416	4 March 1867 - - - - (G. 45—43; 73—3—7969.)	Converting 22 12-pounder breech-loading guns from sea service to land service, as follows; screwing for elevating eyes, stamping sights, coppering, and browning.	7 19 6	1 17 6	4 2 –	13 19 –	15 12 6
297	4 May 1867 - - - - (G. 48—4; 73—3—8018.)	Manufacturing 42 brass tangent slides, of various natures, for duplicate patterns.	6 17 4½	1 17 9½	3 10 6	12 5 8	13 15 2
295	20 February 1867 - - - (G. 45—87; 85—G. N.—1005.)	Manufacturing sockets for sights, as follows: moulding, casting, turning, and fitting two sockets with screws for hind centre sights, and three tangent scales, for sealing, as patterns.	2 19 4	– 17 4¼	1 10 6	5 7 2¼	6 – –¼

404	13 February 1861 - - - (G. 45—22; 57—Woolwich—3156.)	Repairing 150-pounder W. I. gun, of Elswick manufacture, as follows: making pattern, moulding, casting, and fitting two elevating patches; adjusting sights, turning and screwing copper vent; re-venting gun and adjusting sights; turning and fitting two steel pivots and eight fixing screws.	7 16 6	2 11 1½	4 - 3	14 7 10½	16 2 5½	
282	13 February 1861 - - - (G. 32—345; 57—Woolwich—3156.)	Manufacturing three iron breech rings, and fitting them to 7-inch 82 cwt. breech-loading guns, No. 238, Royal Gun Factory, and 130 Elswick Ordnance Company. Cutting off and boring out old tube and breaking out the shell of 20-pounder eight cwt. breech-loading gun, No. 492; coiling, welding, facing, and uniting coils to form the tube, and shrinking it into the gun; finish boring gun, chambering, lapping, rifling, screwing for copper, manufacturing copper ring, coppering, and finishing inside, after proof.	9 4 9	2 - 3¾	3 18 5	15 3 5¾	16 19 10¾	
336	13 July 1864 - - - - (73—3—5454.)	Altering and repairing 33 7-inch breech screws, including rough turning and parting to receive new steel ends; parting, turning, boring, screwing, and tempering the ends; re-boring, re-plugging, fitting, and finishing them complete; also drilling out old plugs, and removing steel ends; plugging up the old holes, and refitting the tempered ends; facing and polishing the breech screws.	119 7 3	308 2 1½	61 4 8	488 14 -½	548 8 2½	
342	13 February 1861 - - - (G. 45—191.)	Altering 28 stamps, from 1867 to 1868, as follows: four metal and 24 iron.	2 16 -	- -	1 8 8	4 4 8	4 14 10	
372	20 February 1867 - - - (G. 48—175; 85—G. N.—1005.)	Preparing drawings of 32-pounder 25 cwt. gun, 13-inch 100 cwt., S. S. mortar, 10-inch 52 cwt. S. S., and 13-inch L. S. 36 cwt.	6 5 -	- -	3 4 1	9 9 1	10 11 10	
382	13 February 1861 - - - (G. 48—196.)	Manufacturing six copper rings for 9-pounder vent-pieces, and repairing six 9-pounder vent-pieces.	1 16 6	- 6 3½	- 18 8	3 1 5½	3 8 9½	
385	28 January 1868 - - - (G. 48—195; 61—Portsmouth Factory.)	Preparing drawings of scales, wood, for 6-pounder bronze guns - -	- 12 6	- 1 -	- 6 5	- 19 11	1 2 4	
396	20 February 1867 - - - (G. 48—218; 85—G. N.—1005.)	Planing and filing section of a Chinese bronze gun, with wrought-iron lining, for Rotunda Museum.	1 10 -	- -	- 15 4	2 5 4	2 10 9	
398	20 February 1867 - - - (G. 45—263; 85—G. N.—1005.)	Preparing drawings of turret sights, for sealing, to guide manufacture -	2 2 8½	- 2 6	1 1 11	3 7 1½	3 15 2½	
273	13 February 1861 - - - (G. 39—249; 57—Woolwich 3156.)	Repairing two 40-pounder W. I. breech-loading guns, and fittings, as follows: boring out old tubes, and breaking out shells of 40-pounder 32 cwt. breech-loading guns, R., Nos. 119 and 175; coiling, welding, facing, and uniting together 10 coils to form 1 A tubes; rough and finish turning and boring the tubes, and shrinking them into the guns; boring, broaching, lapping, chambering, turning muzzles, rifling and finishing inside after proof. Filing flaws of the bore of 7-inch 82 cwt. W. I. breech-loading, R., No. 241, of Elswick manufacture. Bevelling breech, thread, and enlarging water-holes of two 6-pounder W. I. guns, R., Nos. 40 and 76, and adjusting breech screws. Manufacturing six 40-pounder and two 6-pounder breech copper rings, and two 40-pounder vent copper rings. Repairing four 7-inch vent-pieces, 11 40-pounders, and three 12-pounders.	55 18 8	50 2 -¼	25 1 2	131 1 10¼	146 16 10¼	

No. 2.—Royal Gun Factories, Woolwich Arsenal—Statement (E.) Miscellaneous Services—*continued.*

Number of Order.	AUTHORITY.	DESCRIPTION.	Labour.	Material.	General Expenses.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
281	19 July 1864 - - - - (G. 45—375; 73—3—5512.)	Altering 40-pounder 32-cwt. wrought-iron breech-loading guns, R., as follows: Enlarging vent slots of 19; enlarging powder chambers of 3; screwing breach thread into water holes of 6; shaping tops of 9; turning and fitting studs to vent holes of 21 guns.	41 6 7	– 8 7	21 4 –	62 19 2	70 10 5
311	16 June 1866 - - - - (G. 39—310; D. 2056—9.)	Manufacturing duplicate patterns; viz., two preserving screws, 1 pattern; two spring spikes for 7-inch muzzle-loading guns, R.; two cross-heads for 7-inch vent-pieces; two wood side scales for 7-inch muzzle-loading guns, and four tin cup extractors for 7-inch breech-loading sea service guns. Two sets of breech tangent sight scales for rifled ordnance. Preparing drawings of two sets of sights for turret ships, two sets for smooth-bore guns, and two sets for various natures of rifled ordnance.	53 9 –¾	14 9 –¼	22 13 10	90 11 11	101 9 7
326	13 February 1861 - - - (G. 39 — 358; 57—Woolwich —3156.)	Repairing guns, vent-pieces, sights, &c., as follows:—Cutting off and boring out old tubes of 40-pounder 35-cwt. breech-loading guns, R., Nos. 11, of Royal Gun Factory make, and Nos. 524 of Elswick make; coiling, welding, facing, and recessing 10 coils, and uniting them together to form 1 A tubes; rough and finish boring and turning the tubes, and shrinking them into the guns; finish boring, lapping, rifling, chambering, turning muzzle, screwing for copper, coppering, and finishing inside of guns after proof. Adjusting sights of six 12-pounder guns, Nos. 5, 11, 45, 61, 65, and 68. Repairing 29 40-pounder vent-pieces, and 17 12-pounders. Making 20 40-pounder breech copper rings, and six 12-pounders; also four 40-pounder vent copper rings, and nine 12-pounders, and finishing the whole complete.	53 4 8¾	81 15 1½	22 15 1	157 14 11¼	176 14 –¼
338	13 February 1861 - - - (G. 45 — 184; 57—Woolwich —3156.)	Repairing one 12-pounder vent-piece, as follows:—Forging, turning, shaping, and fitting cross head and shackles, facing and polishing the vent piece, and fitting on copper ring.	– 14 1	– 2 6	– 7 2	1 3 9	1 6 7
352	13 February 1861 - - - (G. 39 — 428; 57 — Woolwich —3156.)	Repairing two 40-pounder 32-cwt. breech-loading guns, R., Nos. 34 and 83, with 1 A tubes, as follows:—Boring out old tubes, and breaking out shells; coiling, welding, facing, and uniting coils; rough and finish boring, and turning the tubes, and shrinking them into the guns; turning muzzles, finish boring guns, broaching, chambering, rifling, screwing for copper, coppering, and finishing inside after proof. Repairing one 7-inch vent-piece, and one 40-pounder, and making them in conformity with sealed patterns.	34 5 –	69 19 –	14 17 9	119 1 9	133 7 10

365	13 February 1861 - - - (G. 48—155; 57—Woolwich—3156.)	Repairing, facing, and polishing 187 vent-pieces, for breech-loading guns; viz., 99 7-inch, 60 40-pounders, 20 20-pounders, and eight 12-pounders. Manufacturing 40 40-pounder copper rings for vent-pieces, 20 20-pounders, and six 12-pounders, and fitting them to the vent-pieces.	103 17 4½	13 16 6½	53 5 7	170 19 6	191 14 5
391	13 February 1861. - - - (G. 48—204; 57—Woolwich—3156.)	Stamping 263 trunnion and centre fore sights with the words "Trunnion" and "Centre fore."	1 7 4¾	- -	– 14 1	2 1 5¾	2 6 5¾
289	13 February 1861 - - - (G. 39—255.)	Repairing 7-inch 82-cwt. breech-loading gun, No. 9, of Royal Gun Factory make, with a 1 A tube, as follows: Coiling, welding, facing, and uniting together five coils to form a 1 A tube; boring out old tube, and breaking out shell, taper boring gun, rough and finish-boring, and turning the tube and shrinking it into the gun. Boring, broaching, chambering, and rifling the gun, fitting in single bush, and completing ready for proof.	17 15 10	40 6 3¼	8 6 10	66 8 11¼	74 8 9¼
292	20 February 1867 - - - (G. 39—571; 85—G. N.—1005.)	Manufacturing various articles for sealing as patterns; viz.: One vent punch, one centre fore, one hind, one tangent, and one trunnion sight for 13-inch 23-ton muzzle-loading gun, R.; also forging and making complete one derrick and shot bearer for the same.	34 15 4¾	12 11 –¼	17 16 9	65 3 2	72 19 9
283	15 April 1867 - - - - (G. 45—79; S. No. 5—4313.)	Altering two 13-inch 23-ton wrought-iron muzzle-loading guns, R. (of Elswick manufacture), as follows: Re-boring, broaching, lapping after boring, and rifling the guns; rounding muzzles, engraving, shaping tops, filing rifle grooves, drilling sight holes, altering trunnions, fitting patches, cutting grooves, sighting, and painting. Preparing the necessary drawings for the above service.	78 8 7	7 11 7½	40 4 8	126 4 10½	141 8 2½
369	14 November 1867 - - - (G. 48—141; 73—3—8282.)	Repairing and plugging six iron and six steel 7-inch vent pieces - -	3 12 –	- -	1 16 10	5 8 10	6 1 11
378	20 February 1867 - - - (G. 48—183; 85—G. N.—1005.)	Preparing drawings of turret sights for sealing, to guide manufacture -	1 2 11	– 2 6	– 11 9	1 17 2	2 1 8
375	21 January 1868 - - - (G. 45—254; 57—2—17,043.)	Preparation of drawings of 12-inch 23-ton and 11-inch 23-ton guns -	1 18 4	– 4 –	– 19 7	3 1 11	3 9 4
368	11 December 1867 - - - (G. 48—164; 57—2—16,853.)	Preparing three tracings of the following muzzle-loading guns:—10-inch 18-ton (made for H. M. S. "Hercules"), 7-inch 6½-ton, and 9-inch 12-ton, F. construction.	– 17 4	– 2 –	– 8 10	1 8 2	1 11 7
400	5 March 1868 - - - - (G. 45—267; 57—2—17,474.)	Engraving scale of yards on eight breech tangent sights and four hind sights.	2 – 4	- -	1 – 8	3 1 –	3 8 4

No. 2.—Royal Gun Factories, Woolwich Arsenal—Statement (E.) Miscellaneous Services—*continued.*

Number of Order.	AUTHORITY.	DESCRIPTION.	Labour. £. s. d.	Material. £. s. d.	General Expenses. £. s. d.	TOTAL COST per Balance Sheet, No. 1. £. s. d.	TOTAL COST per Balance Sheet, No. 2. £. s. d.
403	10 April 1867 - - - - (G. 45—90; 24,509—565.)	Packing lithographs for various stations - - - - - - -	– 11 3	9 – 8¾	– 5 9	9 17 8¾	11 1 5¾
394	13 February 1861 - - - (G. 45—7; 57—Woolwich—3156.)	Manufacturing two breech bushes, iron, for 7-inch 82 cwt. breech-loading guns R.; fitting patches, re-venting, and adjusting sights of two 9-inch 12-ton muzzle-loading guns, and repairing two 7-inch vent-pieces.	11 11 7½	– 6 10¾	5 11 4	17 9 10¼	19 11 11¼
474	27 April 1865 - - - -	Expenses in connection with the instruction of officers and non-commissioned officers of the Royal Artillery, &c., Captain Instructor's branch.	274 19 8¾	7 9 5	440 6 –	722 15 1¾	737 11 9¾
285	17 October 1866 - - - (73—3—1486.)	Examining, cleaning, and greasing from time to time any breech-loading guns, in charge of the Principal Superintendent of Stores.	56 6 1½	48 1 10¼	28 17 8	133 5 7¾	149 5 10¾
287	5 September 1858 - - - (57—Woolwich—790.)	Examining, cleaning, and greasing from time to time any breech-loading guns at the Grand Depôt, Woolwich.	83 9 10	- -	42 16 8	126 6 6	141 10 –
286	17 April 1867 - - - - (G. 45—78 and 45—102; 73—3—1486.)	Removing and examining stores of various natures for the Principal Superintendent of Stores.	137 10 2½	23 5 2¼	70 10 10	231 6 2¾	259 1 11¾
395	13 February 1861 - - - (G. 32—229; 57—Woolwich—3156.)	Completing the repair of 20-pounder, breech-loading gun, No. 152, including turning muzzle, finishing inside after proof, screwing for copper, and coppering.	3 8 –½	- -	1 14 10	5 2 10½	5 15 3½
354	13 February 1861 - - - (G. 32—103; 57—Woolwich—3156.)	Completing the repair of 7-inch 82-cwt. breech-loading gun, No. 51, including finishing inside after proof, chambering, and fitting single bush.	4 14 9	- -	2 9 7	7 4 4	8 1 8
334	13 February 1861 - - - (57—Woolwich—3156.)	Completing the repair of 7-inch 82-cwt. breech-loading gun, R., including rifling, chambering, and finishing inside after proof.	2 11 2	- -	1 6 2	3 17 4	4 6 7
363	13 February 1861 - - - (G. 39—42; 57—Woolwich—3156.)	Completing the repair of 7-inch 82-cwt. breech-loading gun, R., including chambering, rifling, and finishing inside after proof.	4 4 11	- -	2 8 6	6 13 5	7 9 5
392	13 February 1861 - - - (G. 32—211; 57—Woolwich—3156.)	Completing the repair of 20-pounder breech-loading gun, R., No. 69, including boring and turning second 1 A tube (the first having been defective), shrinking it into the gun, turning muzzle, boring, broaching, chambering, screwing for copper, coppering, and finishing inside after proof.	7 11 1¼	- -	3 17 6	11 8 7¼	12 16 1¼
384	13 February 1861 - - - (G. 39—117; 57—Woolwich—3156.)	Completing the repair of 20-pounder gun, No. 2, as follows: boring, broaching, turning muzzle, chambering, rifling, and finishing inside after proof.	4 7 1	– 9 2	2 4 8	7 – 11	7 17 10
386	23 September 1865 - - - (G. 32—200 to 204; 57—Woolwich—3156.)	Completing the repair of two 7-inch 82-cwt. breech-loading guns, Nos. 83 and 530, as follows: rough and finish turning and fitting in tubes, cutting off ends, finish boring, rounding muzzle, broaching, chambering, and rifling.	17 16 1	– 17 2½	9 2 8	27 15 11½	31 2 9½

347	13 February 1861 - - - (G. 48—108; 57—Woolwich—3156).	Manufacturing three vent copper rings, facing and polishing 4, 12 and 9-pounder vent-pieces, forging, turning, fitting, and finishing two crossheads and shackles, and fitting them to the vent-pieces.	2 7 4½	- -	1 4 4	3 11 8¼	4 - 4¼
413	22 December 1865 - - - (G. 45—270; 80—Woolwich—906.)	Unloading, examining, and taking impressions of two 9-inch muzzle-loading, Whitworth, steel-tempered rifled guns, of 15 tons; also preparing plates and bolts for vent arrangements.	6 9 -¾	19 3 5¼	3 6 2	28 18 8	32 8 1
293	13 February 1861 - - - (G. 27—320; 57—Woolwich—3156.)	Repairing 7-inch 82-cwt. and 40-pounder 35-cwt. breech-loading guns, R., as follows: boring out old tubes and breaking out the shells of 7-inch 82-cwt. breech-loading guns, Nos. 12 and 316, and 40-pounder 35-cwt., No. 172; coiling, welding, facing, and uniting the coils to form the tubes, rough and finish turning, boring, and shrinking them into the guns; boring, lapping, chambering, rifling, fitting in breech rings, and finishing inside after proof.	47 17 -½	166 3 1¾	22 - 9	236 - 11¼	264 8 1¼
323	13 February 1861 - - - (G. 45—149; 57—Woolwich—3156.)	Repairing one 7-inch vent-piece - - - - - - - -	- 18 -	- -	- 9 3	1 7 3	1 10 6
327	23 August 1867 - - - (G. 48—85; 73—3—8182.)	Lengthening the trunnions of 218 wrought-iron muzzle-loading guns, to make them in conformity with the established pattern.	644 4 5¼	115 3 6½	330 9 9	1,089 17 8¾	1,221 14 10¾
407	10 August 1864 - - - (G. 45—25; 85—9—620.)	Manufacturing sights, various, for wrought-iron guns, for sealing as patterns, one each of 9-inch, 8-inch, 7-inch, and 64-pounder guns, and four centre hind sights.	11 10 9½	- 11 -½	5 2 6	17 4 4	19 5 9
274	20 February 1867 - - - (G. 39—547; 85—G. N.—1005.)	Preparing drawings and specifications of various natures of wrought-iron muzzle-loading guns, for sealing as patterns.	5 7 -½	- 15 -	2 14 11	8 16 11½	9 18 2½
299	13 February 1861 - - - (G. 32—366; 57—Woolwich 3156.)	Repairing 6-pounder guns and fittings, &c., as follows: bevelling breech thread and enlarging vent-holes of 6-pounder breech-loading guns, Nos. 23 and 28, adjusting breech-screws, refacing 40-pounder vent-piece; also manufacturing one 40-pounder breech copper ring, and five 6-pounders.	1 17 1	1 10 -¾	- 15 9	4 2 10¾	4 12 9¾
309	29 May 1866 - - - - (G. 32—392—81—Portsmouth Factory—233 and 234.)	Manufacturing gun fittings, as follows: drifting and finishing 8 buckles, forging, fitting, engraving, and blueing 10 land service and 10 sea service breech tangent sights, finishing and fitting one buckle for 9-inch breech tangent sight, for duplicate pattern, engraving scale of yards on three 9-inch and 64-pounder breech tangent sights.	19 19 3	6 1 11¾	8 9 6	34 10 8¾	38 13 8¾
356	13 February 1861 - - - (G. 39—442.)	Repairing one 7-inch vent-piece, with new shackle, &c., and repairing and adjusting the sight of 40-pounder, No. 87.	2 6 7	- -	- 19 10	3 6 5	3 14 5
359	13 February 1861 - - - (57—Woolwich—3156.)	Repairing 40-pounder, No. 187, and 20-pounder, No. 86, breech-loading guns, with 1 A. tubes, &c., as follows: cutting off and boring out old tubes, and breaking out the shells, coiling, welding, facing, and uniting coils to form the tubes, rough and finish-boring and turning the tubes, and shrinking them into the guns; boring, chambering, lapping, rifling, coppering, and finishing inside after proof. Repairing seven 7-inch vent-pieces, 11 40-pounders, and 36 12-pounders.	68 10 -½	97 17 6¾	31 3 -	197 10 7¼	221 15 4¼

No. 2.—Royal Gun Factories, Woolwich Arsenal—Statement (E.) Miscellaneous Services—*continued.*

Number of Order.	AUTHORITY.	DESCRIPTION.	Labour.	Material.	General Expenses.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
393	10 August 1864 - - - (G.45—5; 85—Gen.No.—620.)	Manufacturing one set of tools for venting heavy ordnance, including the preparation of drawings, moulding and casting five gun metal boring heads, and four cast-iron collars; forging bars and other necessary forgings, turning, drilling, and fitting the whole complete, for sealing as patterns.	45 17 5¾	19 14 8¾	20 2 9	85 14 11½	96 2 3½
339	13 February 1861 - - - (G. 39—403; 57—Woolwich—3156.)	Repairing 40-pounder 35 cwt. breech-loading gun, No. 212, as follows:—Cutting off and boring out old tube, coiling, welding, facing, and uniting coils to form the tube, turning and boring the tube, and shrinking it into the gun; boring gun, lapping, chambering, and rifling; also making and fitting the gun with a new 2 C. coil, and finishing inside after proof. Refacing and repairing one 20-pounder vent piece.	18 19 4	34 11 4½	8 8 4	61 19 -½	69 7 10½
406	13 February 1861 - - - (G. 32—286; 57—Woolwich—3156.)	Completing the repair of 20-pounder gun, breech-loading, R., No. 28, as follows:—Rough and finish-boring 1 A. tube, and shrinking it into the gun; boring, broaching, turning muzzle, chambering, lapping, rifling, coppering, and finishing inside after proof.	5 16 5	- 9 2	2 19 9	9 5 4	10 7 6
288	13 February 1861 - - - (G. 27—270; 57—Woolwich—3156.)	Repairing 7-inch 82 cwt. breech-loading guns, R. as follows:—Boring out the tubes of No. 7, Elswick Ordnance Company, and 57 and 61, Royal Gun Factory, breaking out the shells, and taper-boring the guns; forging, turning, boring, and fitting the tubes, and shrinking them into the guns; cutting off ends of tubes, boring, broaching, chambering, and rifling manufacturing iron breech-rings, fitting them into the guns, and finishing inside after proof, altering vent holes, and repairing breech-screws. Manufacturing 11 iron breech-rings, and fitting them into the following guns:—Nos. 20, 94, 95, 102, 113, 116, and 119 of Elswick Ordnance Company, and Nos. 35, 95, 189, and 143 of Royal Gun Factory manufacture.	103 18 5½	130 17 6½	47 19 10	282 15 10	316 15 4
306	13 February 1861 - - - (G. 39—294; 57—Woolwich—3156.)	Repairing six wrought-iron targets, including forging ends of stays, turning and fitting the same; also fitting and preparing the targets for service.	3 18 6	- 1 -½	1 13 4	5 12 10½	6 6 5½
291	13 February 1861 - - - (G. 27—304; 57—Woolwich—3156.)	Repairing eight breech-loading guns, as follows:—Fitting iron breech-rings in Nos. 87 and 90, 7-inch 82 cwt. breech-loading guns. Boring out old tubes and breaking out the shells of five 7-inch 82 cwt. breech-loading guns of Royal Gun Factory manufacture, and one of Elswick Ordnance Company; forging, turning, and boring the 1 A tubes, and shrinking them into the guns; boring, broaching, chambering, and rifling; manufacturing iron breech-rings, and fitting them into the guns, and finishing inside after proof. Repairing wedge of 40-pounder breech-loading, wedge, gun, and fitting it with new locking pin.	160 11 10	328 18 2¾	73 19 4	563 9 4¾	631 3 5¾

374	(38—612.) - - - -	Stores, &c., issued to Mr. Hurst's office - - - - - - -	- -	2 8 9¾	- -	2 8 9¾	2 8 9¾	
389	15 February 1868 - - -	Expenses for badges, printing, &c., for special constables, Royal Arsenal	- -	38 4 4	- -	38 4 4	38 4 4	
337	8 July 1867 - - - - (G. 45—178; 57—2—15,909.)	Attendance of an artificer at Woolwich Dockyard to sight the guns on board H. M. ships "Plover" and "Rosario."	- 11 3	- -	- 5 9	- 17 -	- 19 1	
367	30 October 1866 - - - (G. 45—235; 57—2—13,900.)	Attendance of an artificer at Woolwich Dockyard to adjust the sights of guns on board H. M. S. "Royalist."	- 15 7½	- -	- 8 -	1 3 7½	1 6 5½	
371	11 December 1867 - - - (G. 48—171; 57—29—1026.)	Attendance of an artificer at Shoeburyness to re-vent 9-inch 12 ton wrought-iron muzzle-loading gun, R., No. 145, Royal Gun Factory.	1 11 2	- -	2 1 8	3 12 10	3 12 10	
430	- - - - - -	Travelling expenses of Deputy Assistant Superintendent to Paris Exhibition.	- -	- -	9 9 6	9 9 6	9 9 6	
431	- - - - - -	Travelling expenses of artificers, &c., to out-stations - - - -	- -	- -	21 16 11	21 16 11	21 16 11	
325	24 April 1867 - - - - (G. 45—83.)	Attendance of an artificer on board H. M. S. "Waterwitch," at Woolwich Dockyard, for the purpose of adjusting the sights of the guns.	- 5 7½	- -	- 2 10	- 8 5½	- 9 5½	
331	10 September 1867 - - - (G. 45—175.)	Attendance of an artificer at Shoeburyness, for the purpose of re-venting 7-inch muzzle-loading gun, No. 6.	1 - 2¼	- 2 6	- -	1 2 8¼	1 2 8¼	
390	12 February 1868 - - - (57—Portsmouth—2925.)	Attendance of draughtsman (Mr. Jones) at Holyhead, in connexion with the guns of H. M. S. "Wivern."	1 13 -	- -	4 18 7	6 11 7	6 11 7	
405	30 October 1866 - - - (G. 48—225; 57—12—13,900.)	Attendance of an artificer at Woolwich Dockyard, to adjust the sights of guns on board H. M. S. "Dwarf."	- 11 3	- -	- 5 9	- 17 -	- 19 -	
409	30 October 1866 - - - (G. 48—224; 52—2—13,900.)	Attendance of an artificer on board H. M. S. "Rapid," to adjust the sights of guns of that vessel.	- 11 3	- -	- 5 9	- 17 -	- 19 -	
278	5 February 1867 - - - (57—19—5402.)	Attendance of a foreman and an artificer to the Northern District to re-vent 38 guns at the various stations.	52 14 10	1 9 3¼	76 15 5	130 19 6¼	130 19 6¼	
316	30 October 1866 - - - (G. 48—51; 57—2—13,900.)	Attendance of an artificer on board H. M. S. "Speedwell," for the purpose of mounting four 20-pounder guns and one 64-pounder.	- 6 3	- -	- 3 3	- 9 6	- 10 8	
321	27 July 1867 - - - - (54—Northumberland Artillery —190.)	Attendance of a foreman at Blackpool to remove a spike from the vent of a 32-pounder gun at that station; also at Berwick, to examine a 32-pounder gun in charge of the Northumberland Militia Artillery.	3 3 4	- -	8 4 3	11 7 7	11 7 7	
380	6 February 1868 - - - (B.)	Travelling expenses of Mr. Waller to Shoeburyness - - - -	- -	- -	1 2 2	1 2 2	1 2 2	
381	6 February 1868 - - - (B.)	Travelling expenses of Mr. Edmonds to Liverpool, to examine 150-pounder gun on board H. M. S. "Wivern."	- -	- -	4 2 3	4 2 3	4 2 3	

No. 2.—Royal Gun Factories, Woolwich Arsenal—Statement (E.) Miscellaneous Services—*continued.*

Number of Order.	AUTHORITY.	DESCRIPTION.	Labour.	Material.	General Expenses.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
310	18 June 1867 - - - - (G. 41—121.)	Attendance of an artificer on board H.M.S. "Waterwitch," at Woolwich Dockyard, for the purpose of adjusting the sights of the guns.	– 5 –	- -	– 2 7	– 7 7	– 8 6
332	29 October 1867 - - -	Attendance of an artificer at Paris, in connection with the stores at the Paris Exhibition.	– 6 3	- -	- -	– 6 3	– 6 3
328	2 September 1867 - - - (57—19—5757.)	Attendance of an artificer and labourer at Hull, to re-vent 19 8-inch 52 cwt., and three 32-pounder 42 cwt. cast-iron guns, on board H.M.S. "Dauntless" and "Speedwell," also preparing the necessary tools, &c.	12 9 8½	3 15 4¾	14 5 7	30 10 8¼	30 10 8¼
968	- - - - - -	Examining, cleaning, greasing, and taking impressions of bores of wrought-iron guns, &c., as they from time to time pass through the Department.	199 14 8	155 9 6¾	161 19 6½	517 3 9¼	634 1 6½
970	- - - - - -	Examining, cleaning, greasing, and taking impressions of bores, &c. of old cast-iron guns and fittings, as they from time to time pass through the Department.	267 – 11¼	37 16 10	226 2 10¾	531 – 8	651 1 1
971	- - - - - -	General repairs at proof butt, including repairing sheers, making bolt for strengthening 9-inch gun-carriage, manufacturing steel vents for temporary venting 9-inch, 8-inch, 7-inch, and 64-pounder muzzle-loading guns, painting and marking rammers, removing projections of tubes of 64-pounder breech-loading wedge gun, making six gun metal rings with set screws for marking rammer staves.	1,066 4 5½	1,358 16 5¾	863 19 4¼	3,289 – 3½	4,032 6 4½
1,022	- - - - - -	Melting 14 tons 9 cwt. 1 qr. 7 lbs. of metal and copper turnings, and casting the same into ingots.	7 12 6½	1,489 16 6½	3 18 3	1,501 7 4	1,681 15 –
1,027	- - - - - -	Manufacturing 211 tons 11 cwt. of blooms from old cast-iron guns -	233 3 5¾	989 1 2¾	119 12 4	1,341 17 –½	1,503 1 4½
1,028	- - - - - -	Manufacturing 521 tons 19 cwt. of blooms from wrought-iron scrap -	313 3 4	2,637 10 11¼	160 13 1	3,111 7 4¼	3,485 3 8¼
1,029	- - - - - -	Manufacturing 689 tons 18 cwt. of blooms from turnings - - -	443 18 8	1,822 11 1¼	227 14 9	2,494 4 6¼	2,793 18 4¼
1,030	- - - - - -	Manufacturing 1,468 tons 7 cwt. of bar-iron from blooms - - -	1,763 16 9¾	9,360 1 –	904 17 –	12,028 14 9¾	13,473 19 –¾
16	- - - - - -	Incomplete 7-inch breech-loading wedge guns issued to the Principal Superintendent of Stores, as follows: five guns, Nos. 1, 2, 3, 4 and 6, shrunk up; two B. tubes rough turned and finish bored; two C. coils rough turned and finish bored; two D. coils rough turned and finish bored; two E. coils rough turned and finish bored; one trunnion finished, eight wedges shaped, and 16 slide bars and handles.	1,068 14 3½	2,938 3 7	659 5 9½	4,666 3 8	5,226 16 1

511	20 February 1867 - - - (G. 45—69; 85—G. N.—1005.)	Bisecting two 7-inch vent-pieces, and planing the bisected faces, showing the channel of the vent, and stamping the nature and number on the face of each.	1 4 –	- -	– 12 4	1 16 4	2 – 8
513	20 February 1867 - - - (G. 39—566; 85—G. N.—1005.)	Reducing 68-pounder block (Jeffrey's) one calibre in length, for further experiment.	1 8 –	- -	– 14 5	2 2 5	2 7 7
519	20 February 1867 - - - (G. 48—9; 87—G. N.—1005.)	Fitting trunnion sights of 12-pounder shunt rifled gun, Sir W. Armstrong's Experimental No. 339, also preparing 12-pounder brass gun, Experimental No. 340, for experiment, including boring up to a calibre of five inches, rifling in three plain grooves, preparing sights, and sighting.	13 13 8	1 12 8¼	7 – 3	22 6 7¼	25 – 3¼
520	20 February 1867 - - - (G. 48—11; 85—G. N.—1005.)	Preparing a 9-inch wrought-iron muzzle-loading gun, rifled, Experimental No. 298, to test Pellett powder, including reducing to a length of 54-inch bore, and re-sighting.	2 18 –	- -	1 9 9	4 7 9	4 18 4
521	20 February 1867 - - - (G. 48—10; 85—G. N.—1005.)	Preparing a 68-pounder brass block, to ascertain the most suitable powder for heavy ordnance, including boring the gun up to eight inches, drilling for, and fitting plugs at the respective distance of 64 and 104 inches.	6 4 9	– 10 3¾	3 4 –	9 19 –¾	11 2 11¾
529	20 February 1867 - - - (G. 48—36; 85—G. N.—1005.)	Engraving inscription on trunnion and base of the 13-inch wrought-iron muzzle-loading Horsfall gun, presented to the British Government by the Mersey Steel and Iron Company.	3 8 –	- -	1 14 10	5 2 10	5 15 2
522	20 February 1867 - - - (G. 45—97; 85—G. N.—1005.)	Turning and testing specimens of iron girders for gun carriages and platforms.	– 18 10	- -	– 9 8	1 8 6	1 12 –
523	20 February 1867 - - - (G. 48—15; 85—G. N.—1005.)	Examining and taking impressions of the 15-inch Rodman gun, the object being to ascertain whether the gun, which has been proved in America, is in a condition which would warrant its acceptance under the regulations for receiving cast-iron guns adopted in this country.	1 18 4	2 17 9	– 19 8	5 15 9	6 9 8
528	20 February 1867 - - - (G. 48—31; 85—G. N.—1005.)	Manufacturing a steel vent with platinum end, taking out old vent and re-venting 9-inch muzzle-loading gun, Experimental No. 329, also taking impressions of the bore after proof.	2 14 7¾	4 1 8	1 8 –	8 4 3¾	9 4 –¾
530	30 April 1864 - - - - (G. 48—38; 180—52.)	Altering a 12-pounder brass gun for the Gun Cotton Committee, including cutting 9·3 inches off the muzzle, moulding and casting a gun-metal dispart for the muzzle, and fitting the same to the gun.	1 18 9⅓	– 5 2	– 19 10	3 3 9½	3 11 5⅓
531	20 February 1867 - - - (G. 48—45; 85—G. N.—1005.)	Graduating four hind sights, sighting and preparing four cast-iron carronades, required for experiment to test the effect of old pattern gun case, and grape shot, when fired from carronades of corresponding calibre, L. S. and S. S., bronze howitzers.	3 6 –	- -	1 13 10	4 19 10	5 11 10
535	8 July 1867 - - - - (G. 45—141; D.—2225.)	Lining and sighting 10-inch 84 cwt. cast-iron gun, Experimental No. 345, lined on Major Palliser's principle, with a coiled tube, and rifled.	– 10 9	- -	– 5 6	– 16 3	– 18 2

No. 2.—Royal Gun Factories, Woolwich Arsenal—Statement (E.) Miscellaneous Services—*continued.*

Number of Order.	AUTHORITY.	DESCRIPTION.	Labour.	Material.	General Expenses.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
534	20 February 1867 - - - (G. 45—135; 85—G. N.—1005.)	Preparing a 7-inch wrought-iron muzzle-loading gun, R., Experimental No. 299, for further experiment, as follows: cutting grooves for handspikes, drilling sight holes, making copper vent, drilling for vent, and re-venting, drilling for and fitting patches, plugging up old vent hole, engraving gun, and adjusting sights; cleaning gun, and taking impressions of the bore.	11 2 5	2 17 2	5 14 –	19 13 7	22 – 10
540	20 February 1867 - - - (G. 48—81; 85—G. N.—1005.)	Bisecting a gun through the centre longitudinally, planing the bisected face, and testing specimens of the metal, for Rotunda Museum.	6 10 11	– 2 1½	3 7 –	10 – –½	11 4 –½
546	20 February 1867 - - - (G. 45—180; 85—G. N.—1005.)	Boring and screwing the trunnions of 9-inch wrought-iron muzzle-loading gun, R., Experimental No. 327; forging, turning, and screwing two steel bolts, and fitting them to the trunnions, for experiment at Shoeburyness, in connection with the subject of the best plan of slinging wrought-iron guns when mounted on wrought-iron carriages.	3 12 –	– 6 2	2 19 6	6 17 8	6 17 8
580	4 March 1863 - - -	Cutting up wrought-iron armour plates into square pieces, showing the indentations, and damage done by the fire of various natures of ordnance and projectiles; marking the damaged pieces; describing the nature of ordnance and projectile used.	12 12 2¾	- -	6 9 4	19 1 6¾	21 7 4¾
524	20 February 1867 - - - (G. 45—107; 85—G. N.—1005.)	Turning and testing studs, in order to ascertain the most suitable alloy for studs for muzzle-loading rifled gun projectiles.	28 19 6	2 1 11½	14 17 3	45 18 8½	51 9 1½
543	20 February 1867 - - - (G. 48—90; 85—G. N.—1005.)	Reducing Jeffrey's 68-pounder block, one calibre in length, viz. 5·1 inches, for experiment.	1 10 –	- -	– 15 5	2 5 5	2 10 10
564	20 February 1867 - - - (G. 45—152; 85—G. N.—1005.)	Reducing Jeffrey's 68-pounder block, one calibre in length, for experiment.	1 10 –	- -	– 15 5	2 5 5	2 10 10
555	22 October 1867 - - - (G. 48—133; 80—G. N.—1225.)	Stamping sights, and sighting one 8-inch 65 cwt., and one 32-pounder 58 cwt., cast-iron guns, which had been lined on Major Palliser's principle, for service on board H. M. S. "Excellent."	1 13 4	- -	– 17 1	2 10 5	2 16 5
556	20 February 1867 - - - (G. 48—137; 85—G. N.—1005.)	Preparing drawings of a 68-pounder 95 cwt. cast-iron gun, condemned for having fissures round the vent.	– 6 1½	– 1 –	– 3 2	– 10 3½	– 11 6½
557	20 February 1867 - - - (G. 48—144; 85—Gen. No.—1005.)	Preparing drawings showing the sighting of 7-pounder muzzle-loading gun, R.	1 7 1	– 2 6	– 13 10	2 3 5	2 8 8
562	20 February 1867 - - - (G. 48—147; 85—Gen. No.—1005.)	Preparing drawings showing the rifling of the 8-inch gun proposed to be bored, and re-rifled on the Woolwich system.	– 4 4½	– – 6	– 2 3	– 7 1½	– 7 11½

552	20 February 1867 - - - (G. 48—123; 85—G. N.—1005.)	Manufacturing one set of sights for 7-pounder steel muzzle-loading gun, R., as follows: one sight, fore, in the rough, one socket, metal, for tangent scale, one tangent scale, spare, steel, and one wood.	1 7 5½	- -	- 14 1	2 1 6½	2 6 6½
567	- - - - - - -	Cleaning inside and outside, and taking impressions of a 5-inch bronze gun.	- 3 6	1 15 10½	- 1 9	2 1 1½	2 6 -½
561	20 February 1867 - - - (G. 48—146; 65—Gen. No.—1005.)	Plugging up three 7-inch vent pieces, required for experiment in connection with the proposition to add to the efficiency of 7-inch breech-loading Armstrong guns, by venting them through the body, and supplying solid blocks for use in stopping the breech, instead of the vent pieces.	1 - -	- -	- 10 3	1 10 3	1 13 10
514	20 February 1867 - - - (G. 45—84.)	Preparation of drawings of 11-inch muzzle-loading gun, R., as proposed by Captain Heath, R.N., of 23 and 21 tons respectively.	2 3 9	- 3 6	1 2 6	3 9 9	3 18 2
533	20 February 1867 - - - (G. 45—134.)	Preparation of drawing of a 9-inch 12-ton wrought-iron muzzle-loading gun, R.; also of furnace and large tongs.	1 1 10½	- 2 -	- 11 3	1 15 1½	1 19 4½
582	20 February 1867 - - - (G. 45—257; 85—G. N.—1005.)	Proving 64-pounder Palliser gun, Experimental No. 348; examining and taking impressions from time to time during the experiment.	5 14 9¾	5 2 1¼	2 18 10	13 15 9	15 8 10
588	20 February 1867 - - - (G. 45—261; 85—G. N.—1005.)	Preparation of drawings of the fittings of carriages for turret guns -	- 7 3½	- 1 -	- 3 9	- 12 -½	- 13 5½
517	20 February 1867 - - - (G. 45—92; 85—G. N.—1005.)	Preparing appliances for moving heavy ordnance, as proposed by Mr. Anderson, including the manufacture of a cone, bush, taps, &c.; also the attendance of an artificer at Shoeburyness in connection with the above service.	10 1 6½	5 8 10½	6 15 -	22 5 5	24 4 3
544	8 August 1867 - - - (G. 45—166; 73—3—8179.)	Preparation of drawings of howitzers for siege purposes - - -	3 - 10	- 5 -	1 11 2	4 17 -	5 8 8
577	20 February 1867 - - - (G. 48—201; 85—G. N.—1005.)	Squaring off the muzzle of 7-inch wrought-iron muzzle-loading gun, R., No. 194, to enable them to carry out an experiment to ascertain the velocity of projectiles when fired with air spaces of different lengths between the projectiles and cartridges.	1 2 -	- -	- 11 3	1 13 3	1 17 3
578	20 February 1867 - - - (G. 48—206; 85—G. N.—1005.)	Manufacturing two bits vent, land and sea service; two drifts vent, garrison, and two prickers or priming irons, garrison; the whole 23 inches long, for guns of 18 tons and upwards.	- 4 3¼	- - 7	- 2 2	- 7 -¼	- 7 10¼
584	20 February 1867 - - - (G. 45—359; 85—G. N.—1005.)	Drilling two gun-metal plugs, required in connection with an experiment to test the most suitable powder for use with guns of large calibre.	- 5 -	- -	- 2 7	- 7 7	- 8 6
586	20 February 1867 - - - (G. 45—262; 85—G. N.—1005.)	Manufacturing copper vent, and re-venting 64-pounder muzzle-loading gun, Experimental No. 348, which had been lined on Captain Palliser's principle.	- 9 10¾	- 2 6	- 5 1	- 17 5¾	- 19 6¾

No. 2.—Royal Gun Factories, Woolwich Arsenal—Statement (E.) Miscellaneous Services—*continued.*

Number of Order.	AUTHORITY.	DESCRIPTION.	Labour.	Material.	General Expenses.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
599	1 May 1866 - - - - (G. 39—262.)	Repairing 20-pounder wrought-iron breech-loading gun, No. 36, as follows: cutting off and boring out old tube, and broaching B. tube, forging and uniting 4 coils, to form the 1 A tube, turning and boring the tube and shrinking it into the gun; turning muzzle, boring, broaching, chambering, rifling, screwing for copper, coppering, screwing for sight ring, and finishing, cutting lines and eye for chain, drilling and plugging sight holes, finishing inside, and sighting. Manufacturing four breech tangent sights, four trunnion sights, and re-sighting 20-pounder wrought-iron, breech-loading, L. S. gun, No. 13, and 6-pounder, No. 16.	43 13 1	24 4 6	22 7 7	90 5 2	101 2 1
699	10 April 1864 - - - - (G. 45—42; 85—G. N.—620.)	Moulding, casting, trimming, boring, rifling, and fitting three cast-iron cylinder gauges, similar to the bores of the undermentioned wrought-iron muzzle-loading guns, rifled, viz., 9-inch, 8-inch, and 7-inch.	39 4 4½	5 13 4	20 2 4	65 - -½	72 16 2½
575	20 February 1867 - - - (G. 48—190, and G. 45—250; 85—G. N.—1005.)	Manufacturing two copper vents, and re-venting twice, 64-pounder muzzle-loading Palliser gun, Experimental No. 348, to continue the test of endurance.	- 17 -	- 5 -	- 8 8	1 10 8	1 14 4
572	20 February 1867 - - - (G. 48—170; 85—G. N.—1005.)	Boring and rifling 5-inch bronze rifled muzzle-loading gun, Experimental No. 340, for further reference in connexion with the subject of rifled bronze guns.	1 10 -	- 3 -	- 15 5	2 8 5	2 14 3
571	20 February 1867 - - - (G. 48—237; 85—G. N.—1005.)	Preparing a drawing showing the size of groove, portion of bore, and position of centre of curve of 10-inch 18-ton muzzle-loading gun, rifled.	- 4 4½	- - 6	- 2 3	- 7 1½	- 7 11½
548	20 February 1867 - - - (G. 45—192; 85—G. N.—1005.)	Manufacturing 100 brass connecting screws for use in experiment with electro-ballistic apparatus.	5 16 8	- 15 7½	2 19 9	9 12 -½	10 15 1½
547	20 February 1867 - - - (G. 48—99; 85—G. N.—1005.)	Rendering assistance in carrying out the experiment to test a steel carriage for 7-pounder steel muzzle-loading gun, rifled, 150 lbs.	- 5 -	- -	- 2 7	- 7 7	- 8 6
536	10 August 1864 - - - (G. 48—60; 85—G. N.—620.)	Sighting and completing a 12-inch 23-ton wrought-iron muzzle-loading gun, rifled, and fitting studs on the muzzle to support a quadrant, for experiment at Shoeburyness.	5 11 -	- 6 -	2 16 11	8 13 11	9 14 10
658	- - - - - -	Testing the endurance of three 9-inch 12-ton wrought-iron guns, muzzle-loading rifled, Experimental Nos. 329, 330, and 331; examining, and taking gutta-percha impressions of the bores from time to time during the proof.	46 5 -	142 14 6½	39 17 7	228 17 1½	256 7 -½

512	21 March 1867 - - - - (G. 45—71; 85—G. N.—1034.)	Stamping letters and numbers on the stocks of various natures of small arms.	– 18 9	- -	– 9 8	1 8 5	1 11 11
545	20 February 1867 - - - (G. 45—170; 85—G. N.—1005.)	Examining and taking impressions of the bore of 10-inch muzzle-loading gun, 18 tons, Experimental No. 318.	– 16 –	5 15 6	– 8 2	6 19 8	7 16 6
568	20 February 1867 - - - (G. 45—333; 85—G. N.—1005.)	Attendance of military at proof butt, to fire 10 rounds from a 32-pounder 46-cwt. cast-iron gun.	– 5 –	- -	– 2 7	– 7 7	– 8 6
581	13 August 1859 - - - (85—G. N.—3100.)	Preparation of drawings, as required from time to time - - - -	8 11 1½	– 7 6	4 7 8	13 6 3½	14 18 3½
583	30 April 1864 - - - - (G. 22—334; 180—152.)	Examining guns at proof butt - - - - - - - - -	2 14 –¼	1 10 4	1 7 8	5 12 –¼	6 5 5¼
549	14 September 1867 - - - (G. 48—104; 73—3—8234.)	Manufacturing one sight with deflection vernier - - - - -	4 16 9½	– 7 6	2 9 7	7 13 10½	8 12 4½
553	9 September 1867 - - - (G. 48—125; 80—P.—278.)	Proving two cast-iron guns which had been converted on the Palliser principle, for Her Majesty's Ship "Excellent."	2 2 6	1 14 9¾	– 16 2	4 13 5¾	5 14 7¾
573	20 February 1867 - - - (G. 48—181; 85—G. N.—1005.)	Temporary sighting 9-inch Palliser gun, Experimental No. 293, proving and taking gutta-percha impressions of the bore from time to time during the proof.	16 13 –¼	25 16 –¾	8 10 8	50 19 9	57 2 3
656	10 August 1864 - - - (G. 32—516; 85—G. N.—620.)	Manufacturing a shot bearer for 9-inch experimental gun, No. 333 -	4 16 7½	– 5 6¾	2 9 6	7 11 8¼	8 9 11¼
701	12 August 1864 - - - (G. 39—539.)	Manufacturing a shot bearer for 12-inch muzzle-loading gun, including forging plates and bars, turning studs and handles, moulding and casting 12 gun-metal castings, and fitting the whole complete.	8 17 1½	1 5 5½	4 10 9	14 13 4	16 8 7
663	10 August 1864 - - - (G. 39—421; 85—G. N.—620.)	Converting a 32-pounder 46-cwt. cast-iron gun into a breech-loader, on Krupp's principle, including the preparation of drawings, cutting a hole through the breech to receive the wedge, forging wedge and lever, turning, planing, and fitting the same to breech opening; boring, re-venting, and preparing it for proof; preparing sights, and completing the gun after proof.	53 8 11½	11 – 5¾	23 1 1	87 10 6¼	98 – 10¼
619	10 August 1864 - - - (G. 32—396.)	Preparing patterns for elevating patch, and bracket for sight, forging, turning, and fitting sight and pivot, and sighting gun on one side; also making shot bearer for the same.	23 19 4¾	7 14 1	12 5 11	43 19 4¾	49 5 –¾

No. 2.—Royal Gun Factories, Woolwich Arsenal—Statement (E.) Miscellaneous Services—*continued.*

Number of Order.	AUTHORITY.	DESCRIPTION.		Labour.	Material.	General Expenses.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
				£. s. d.	£. s. d.	£. s. d.	£ s. d.	£. s. d.
515	20 February 1867 - - - (G. 39 — 569; 85—G. N.—1005.)	Attendance of a foreman and labourer at Shoeburyness, for the purpose of examining and taking impressions of one 8-inch gun, Experimental, No. 325; two 64-pounders, Nos. 302 and 303 (Palliser's) 7-inch No. 28, and 9-inch, Experimental, No. 327.		3 10 4¾	9 4 3	1 3 2	13 17 9¾	13 17 9¾
518	20 February 1867 - - - (G. 48—8; 85—G. N.—1005).	Attendance of an artificer at Shoeburyness to re-vent 10-inch gun Experimental, No. 318, at that station, also preparing the necessary tools, &c.		3 6 3¾	- 5 -	6 7 10	9 19 1¾	9 19 1¾
526	20 February 1867 - - - (G. 45—111; 85—G. N.—1005.)	Attendance of an artificer at Shoeburyness to re-vent a 7-inch 7 ton wrought-iron muzzle-loading gun, R., No. 28.		1 2 10½	- 3 -	1 15 9	3 1 7½	3 1 7½
539	20 February 1867 - - - (G. 45—153 and 48—79; 85—G. N.—1005.)	Attendance of an artificer at Shoeburyness, for the purpose of re-venting 9-inch wrought-iron muzzle-loading gun, R., Experimental No. 298, and 8-inch wrought-iron muzzle-loading gun, R., No. 325.		2 4 10¼	- 5 -	4 15 4	7 5 2¼	7 5 2¼
565	19 November 1867 - - - (57—29—2018.)	Attendance of an artificer and labourer at Shoeburyness, for the purpose of examining 9 inch 12 ton wrought-iron muzzle-loading gun, R., No. 145, after firing 333 rounds.		1 5 10	- -	2 12 4	3 18 2	3 18 2
541	20 February 1867 - - - (G. 45—164; 85 G. N.—1005).	Attendance of an artificer at Shoeburyness, for the purpose of re-venting 9-inch wrought-iron muzzle-loading gun, Experimental No. 327.		1 - 5	- 2 6	- -	1 2 11	1 2 11
			No.					
742	29 March 1867 - - - (G. 45—64.)	Sighting and completing 12-pounder 8 cwt. breech-loading guns, R., and 9-pounders 6 cwt., for India Store Department - -	3	25 18 5	2 9 8	12 13 11	41 2 -	46 - 9
			6	53 18 2	7 16 3	26 18 10	88 13 3	99 6 4
747	11 May 1867 - - - - (G. 45—95; 57—16—2427.)	Sighting and completing 12-pounder 8 cwt., L. S., breech-loading Guns, R., for India Store Department.	24	207 7 4½	19 17 6¾	101 11 7	328 16 6¼	368 6 8¼
746	14 December 1867 - - - (G. 48—168.)	Sighting and completing 9-pounder 6 cwt. L. S., breech-loading guns, R., for India Store Department.	6	53 18 2	7 16 3	26 18 10	88 13 3	99 6 4
741	11 December 1867 - - - (G. 48—168.)	Manufacturing the following spare fittings, viz.:—Bushes, breech, copper, 9-pounder, 12; bushes, copper, vent-piece, 9-pounder, sets, 12; eyes, elevating, with bolts, washers, and pins, 9-pounder, 2; pieces, vent, iron, 12; pins, keep for levers, 12 or 9-pounder, 12; and rings, copper vent piece, 12 or 9-pounders, 61.		23 9 2	16 9 6	11 19 9	51 18 5	58 3 2

737	3 September 1867 - - - (G. 48—126; 57—16—2550 and 2647.)	Manufacturing stores, various, for Indian Government, consisting of 12 sets of bushes, copper, for 12-pounder vent-pieces; 20 copper rings, breech, 6-pounder; and 18 copper rings, vent piece, 6 pounder.	3 4 6	3 12 2¼	1 13 1	8 9 9¼	9 10 1¼
750	29 July 1867 - - - - (G. 48—77; 57—17—1275.)	Moulding and casting 800 sets of brass chain marks, for Ordnance Survey Office, Southampton.	1 7 9¼	5 14 11	– 14 3	7 16 11¼	8 15 9¼
796	2 April 1867 - - - - (Reg. No. 34,819.)	Manufacturing 10 wrought-iron tubes for Inspector of Works, for service at the proof butt.	32 – –	25 7 6¾	16 8 4	73 15 10¾	82 12 8¾
732	21 September 1867 - - - (G. 45—189; 57—20—4505.)	Engraving trunnion caps; altering and repairing the 9-inch gun carriage, manufactured at Elswick, for the Colony of Victoria.	5 13 –	- -	2 18 –	8 11 –	9 11 6
727	6 August 1867 - - - - (G. 45—152; 57—16—2560.)	Manufacturing the undermentioned articles, various, for India Store Department, Bengal (spare fittings for four batteries of 12-pounder Armstrong guns), as follows:—Forging, turning, fitting and finishing 24 elevating eyes, and 48 pins, keep; cutting off bars, hammering, drilling, turning, screwing, and fitting 48 bushes, breech, copper; 48 rings, copper, for vent-pieces, and 48 bushes, copper, for vent-pieces; turning, fitting, and finishing complete, with cross-heads, &c., 48 vent-pieces; making the necessary castings, forging, fitting, and finishing complete, four sets of facing implements.	126 19 –¾	47 11 8¾	64 8 7	238 19 4½	267 13 7½
734	17 October 1867 - - - (G. 45—207; 57—16—2653.)	Preparing drawings of spikes, common, and punches (one of each), for the Military Secretary, India Office.	– 8 2	– 1 6	– 4 2	– 13 10	– 15 6
721	8 March 1867 - - - - (G. 48—49; 57—6—2349.)	Manufacturing stores, various, for India, as follows:—Instruments for taking impressions of vents in gutta percha, eight sets; pots for softening gutta percha, eight; rimers, vent, seven; scrapers, foreright, 24, and scrapers, half-round, 24; gauges, vent, four sets; scrapers, vent spring, eight, and scrapers, vent, half round, eight; tongs for grinding scrapers, eight; and tools for grinding searcher points, eight.	60 5 8	16 2 10	30 18 6	107 7 –	120 4 11
719	16 May 1867 - - - - (G. 45—103; 57—20—4366.)	Preparing drawings of shot bearer for 9-inch 12-ton muzzle-loading gun, for Major Scratchly, Royal Engineers, Woolwich.	– 10 5	– 2 –	– 5 4	– 17 9	– 19 11
731	28 August 1867 - - - (G. 48—95; 57—20—4476.)	Manufacturing two shot and shell bearers for 7-inch muzzle-loading guns, for Colony of Victoria; also moulding and casting four gun-metal joints; forging and fitting a plate for impression instruments, supplied on a former demand.	3 5 6¼	– 15 6¾	1 13 7	5 14 8	6 8 5
726	8 July 1867 - - - - (G. 48—63; 57—16—2520.)	Manufacturing eight sets of 12 pounder facing implements, two sets of 9-pounders, and two sets of 6-pounders; 24 bushes, copper, breech, for 9 pounder guns; 24 rings, copper, vent-piece, for 9 pounder guns; repairing 24 12-pounder elevating eyes, and 17 9-pounders; and manufacturing 41 pins, keep, for the same, for India Store Department.	72 17 –¼	18 15 6¼	37 7 5	128 19 11½	144 9 10½

No. 2.—Royal Gun Factories, Woolwich Arsenal—Statement (E.) Miscellaneous Services—*continued.*

Number of Order.	AUTHORITY.	DESCRIPTION.	Labour.	Materials.	General Expenses.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
758	1 April 1865 - - - - (G. 39—445; 7365—460.)	Manufacturing 28 steel gauges, complete, and 24 incomplete, for the Royal Carriage Department.	104 6 5	8 12 10¾	52 6 4	165 5 7¾	185 2 8¾
768	10 April 1867 - - - -	Cleaning boiler used in the Chemical Department - - - -	- 13 10	- -	- 7 1	1 - 11	1 3 5
720	20 February 1867 - - - (G. 48—26; 85—G. N.—1005.)	Firing 50 rounds, examining and taking impressions of the bore of 10-inch, 84 cwt., cast-iron gun, Experimental, No. 345; agreeably to the request of Major Palliser, in order to test his plan of strengthening cast-iron guns, with internal tubes.	2 14 4¼	7 15 6½	1 5 -	11 14 10¾	13 11 4¾
736	5 November 1866 - - - (G. 49—453.)	Proving 70-pounder muzzle-loading, wrought-iron gun ifled, for Tasmanian Government.	1 1 3	- 18 6½	- 8 1	2 7 10½	2 18 8½
704	23 March 1867 - - - G 39—546; 57—16—2370.)	Manufacturing the under-mentioned articles as specimens for India Store Department, Madras:—Five bushes, copper, for 40-pounder vent-pieces, five fore, and five hind centre sights for 9-inch muzzle-loading guns rifled, 20 breech tangent sights for 9-inch, 7-inch, and 40-pounder guns, and 15 trunnion sights for 9-inch and 7-inch guns.	27 2 9	2 15 3	13 18 5	43 16 5	49 1 8
711	16 April 1867 - - - - (G. 39—563; 57—8—5077.)	Moulding, casting, trimming, and fitting two sights, two loops, two muzzle bumps, and two tangent slides, and preparing two 3-pounder, 2½ cwt. brass guns, for Lord Ducie.	4 12 3½	- 2 6	2 7 4	7 2 1½	7 19 2½
717	27 July 1867 - - - - (G. 48—92; 36—298.)	Tempering eight steel tubes in oil, for Messrs. Firth & Son, also cutting a ring off each tube for testing purposes.	12 10 9	5 12 4	6 8 8	24 11 9	27 10 10
714	15 April 1867 - -. - - (G. 39—504; 57—2—4328.)	Manufacturing various natures of gun fittings, &c. for Colonial Government, Victoria, including 74 pins friction tube, 32 plates guide, 288 plugs vent, Captain Hay's pattern, six brass slides for 12 pounder howitzers, four scales tangent wood, eight copper set screws, 79 screws fixing gun, 31 screws fixing carronades, 10 fore, and 10 hind sights for 32-pounder guns, six spikes spring for 12-pounder howitzers, and six for 9-inch muzzle-loading guns rifled, six punches vent, one cast-iron rifled gauge, and 12 shot bearers for 9-inch muzzle-loading guns rifled, also reventing, and adjusting sights, &c. of six 12-pounder howitzers, and thirty 32-pounder guns.	81 9 1¼	12 2 2½	41 15 9	135 7 -¾	151 12 3¾

728	8 July 1867 - - - - (G. 48—83.)	Preparing drawings of shot and shell bearer hooks, for 7-inch muzzle-loading gun rifled, for the Victoria Government, Australia.	- 2 8½	- 1 -	- 1 5	- 5 1½	- 5 8½
730	27 August 1867 - - -	Labourers employed unloading machinery supplied by Mr. Hulse - -	2 4 3½	- -	1 2 8	3 6 11½	3 15 -½
749	17 January 1867 - - - (G. 45—125; 57—17—1207.)	Moulding, casting, and trimming 100 gun-metal screws, planing and fitting a wrought-iron plate for the Ordnance Survey Office, Southampton.	2 3 -½	8 1 -¾	1 2 1	11 6 2¼	12 13 4¼
752	8 March 1866 - - - (G. 45—132; 7855—713.)	Cleaning boiler at the gentleman cadets' workshop, Royal Military Academy.	- 16 -	- -	- 8 2	1 4 2	1 7 -
799	28 December 1866 - - - (G. 39—504; G. No. 5—4229.)	Turning and testing specimens of armour plates, and others supplied by contractors, for iron fortifications, for Inspector of Works.	1 7 9	- -	- 14 3	2 2 -	2 7 -
756	14 December 1867 - - - (G. 45—229; 61—R. C. D.—1231.)	Planing, slotting, and drilling frames of wrought-iron gun carriages, for the Royal Carriage Department.	114 4 8¼	6 5 -½	58 12 1	179 1 9¾	200 12 1¾
755	1 April 1865 - - - - (7165—468.)	Washing 23,600 sponge cloths for the Royal Carriage Department -	8 9 -	13 15 3¾	4 6 8	26 10 11¾	29 14 8¾
784	20 February 1865 - - - (70—G. N.—1862.)	Glazing windows in the under-mentioned sections of the Royal Gun Factories; Dial Square, Brass Foundry, Proof Square, Rifle Ordnance Factory, Gun Boring Mill, and New Turnery.	16 19 8¾	33 11 8¼	8 14 3	59 5 8	66 8 1
702	10 August 1864 - - - (G. 39—542; 85—G. N.—620.)	Engraving inscriptions on two plates for the Rotunda Museum - -	3 10 -	- -	1 15 10	5 5 10	5 18 6
716	29 April 1867 - - - - (G. 48—2; 57—16—2420.)	Manufacturing six 12-pounder steel breech screws, for India Store Department, as follows: rough and finish boring and turning, screwing, shaping octagon, and finishing complete.	7 8 -	19 10 -	3 15 10	30 13 10	34 7 7
722	2 March 1867 - - - - (G. 39—534; 57—8—4976.)	Manufacturing breech copper rings, and coppering five 40-pounder 35 cwt. breech-loading guns rifled, repairing six 40-pounder vent pieces, and packing the guns for Egyptian Government.	5 9 3	1 13 4¼	2 16 -	9 18 7¼	11 2 5¼
703	2 March 1867 - - - (G. 39—555; 57—8—4973.)	Proving and packing guns, viz.: four 8-inch, one 70 pounder and one 40-pounder for Egyptian Government.	17 19 3	7 16 2¼	6 17 5	32 12 10¼	40 - 5¼
764	31 January 1867 - - - (G. 45—18; 61—Laboratory—2248.	Making patterns, moulding, casting, trimming, turning ends, boring, rifling, and fitting five cast-iron cylinder gauges (for the Royal Laboratory), similar to the bores of the under-mentioned wrought-iron muzzle-loading guns rifled, viz.: one 7-inch, one 8-inch, one 9 inch, one 10-inch, and one 12-inch, also moulding, casting, and fitting up moulding box for casting the cylinders in.	113 6 5¼	23 17 9½	58 2 8	195 6 10¾	218 16 2¾

No. 2.—Royal Gun Factories, Woolwich Arsenal—Statement (E.) Miscellaneous Services—*continued.*

Number of Order.	AUTHORITY.	DESCRIPTION.	Labour.	Material.	General Expenses.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
743	3 September 1867 - - - (G. 48—187; 57—16—2580.)	Manufacturing 20 sets of 6-pounder copper bushes for vent pieces, for Indian Government.	– 7 6½	– 12 7¾	– 3 10	1 4 –¼	1 6 10¼
708	1 February 1867 - - - (G. 45—23; 73—8—388.)	Proving guns for Mr. Vavasseur - - - - - - - -	14 3 8	7 17 5¾	5 8 9	27 9 10¾	33 14 1¾
709	29 January 1867 - - - (G. 45—21; 57—20—4193.)	Preparation of drawings of 9-inch muzzle-loading guns, R., for Colonial Government, Victoria.	1 10 8	– 3 –	– 13 –	2 6 8	2 12 3
733	27 September 1867 - - - (G.45—196; 80—G.N.—1201.)	Manufacturing a brass gun for experiment for Indian Government, as follows: making pattern, moulding, casting, turning, planing, boring, rifling and venting, fitting gun after proof, manufacturing sights, sighting, engraving, and finishing complete. *Note.*—The metal for this gun was supplied by the Principal Superintendent of Stores from old guns, and is not therefore included in the charge.	29 – 10½	2 5 3½	14 15 10	46 2 –	51 15 2
735	- - - - - - - (G. 48—127.)	Packing in cases the undermentioned stores for Abyssinia, viz., 12 9-pounder vent-pieces, 12 bushes copper breech, 12 sets of bushes copper for vent-pieces, two elevating eyes, 12 pins keep, 12 copper rings for vent pieces, and six 9-pounder breech-loading guns.	1 6 8	– – 4	– 13 8	2 – 8	2 5 6
710	17 October 1864 - - - (G. 45—67; 7857—188.)	Lithographs of various natures of guns for the Royal Artillery Institute, Woolwich.	- -	– 11 1	- -	– 11 1	– 12 5
718	11 May 1867 - - - - (G. 45—96; 57—20—4354.)	Packing lithographs of guns for the Victoria Government, Australia -	- -	– – 2	- -	– – 2	– – 2
713	24 March 1866 - - - (G. 39—216; 57—16—2079.)	Packing lithographs for India Store Department - - - - -	– 4 –	5 16 2	– 2 1	6 2 3	6 17 1
715	23 February 1867 - - - (G. 45—80; 57—16—2311.)	Manufacturing various articles as duplicate patterns for India Store Department, viz., 14 tangent scales for muzzle-loading guns, one vent-piece for 12-pounder breech-loading gun, two screws preserving crutch, six tangent sights for breech-loading guns, and one extractor tin cup.	10 1 8½	1 9 7¾	5 3 5	16 14 9¼	18 14 11¼

723	28 June 1867 - - - - (G. 48—52; 57—20—4418.)	Proving, examining, and taking impressions of guns for the Colony of Victoria.	50 17 -	49 18 11¾	19 8 -	120 3 11¾	147 7 3¾
763	1 April 1865 - - - - (G. 32—557; 7365—468.)	Forging a spindle, and manufacturing a cast-iron cylinder gauge for the Royal Laboratory, as follows: making pattern, moulding, casting, trimming, turning, boring, rifling, and fitting complete for use in the manufacture of projectiles.	13 13 8	4 7 5	5 16 4	23 17 5	26 14 9
774	24 February 1868 - - - (G. 48—216; 7350—2215.)	Moulding, casting, and trimming a gun-metal spur wheel for Royal Gunpowder Factory, Waltham Abbey.	- 7 8½	5 6 4	- 3 11	5 17 11½	6 12 -½
781	13 August 1866 - - - (G. 39—381; 57—24—4301.)	Manufacturing a steel target of the service dimensions, as follows: forging, planing edge, drilling, and fitting complete; three plates were used; two were defective.	7 4 11	- 14 6½	3 14 4	11 13 9½	13 2 7½
767	- - - - - - -	Stores, &c., issued to Royal Laboratory - - - - - - -	- -	3 5 4½	- -	3 5 4½	3 5 4½
738	19 November 1867 - - - (G. 48—145; 57—8—5432.)	Attendance of Captain Instructor at Elswick, to examine one 9-ton gun, and six 12-ton guns.	- -	- -	6 10 6	6 10 6	6 10 6
712	- - - - - - -	Sighting two 9-inch-wrought iron muzzle-loading 12-ton guns, R., complete with sights, &c., for Australia.	36 16 3	8 15 5½	18 10 11	64 2 7½	71 7 1½
		TOTAL - - - £.	9,885 18 7¾	23,281 9 10	6,011 13 10	39,179 2 3½	44,257 1 2¾

(Examined)

James C. Hurst,
Accountant, and Auditor to the Manufacturing Departments.

No. 2.—Royal Gun Factories, Woolwich Arsenal—*continued.*

STATEMENT (F.)—Manufacture of Fittings and Spare Articles for Smooth-Bore Ordnance.

	£. s. d.
Labour	1,872 13 5¼
Material	575 19 2
Indirect Expenses	957 11 3¾
Total Balance Sheet, No. 1 £.	3,406 3 11
Total Balance Sheet, No. 2 £.	3,815 8 10

Number of Order.	AUTHORITY.	DESCRIPTION.	Number Made.	Labour.	Material.	General Expenses.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
				£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
		Manufacturing various natures of fittings, for iron and bronze ordnance, for store, to meet demands, including the preparation of tools, &c.:						
801	15 March 1867 (G. 45—58; 73—3—8001.)	Aprons, lead	63	– 7 10½	2 11 –½	– 4 –	3 2 11	3 10 6
803	15 March 1867 (G. 45—58; 73—3—8001.)	Bits, vent	637	21 16 3½	2 15 2¾	11 – 8	35 12 2¼	39 17 9¼
819	23 July 1866 (G. 39—363.)	Cups, copper	22	19 18 9	13 12 4¾	9 13 1	43 4 2¾	48 8 –¾
822	15 March 1867 (G. 45—58; 73—3—8001.)	Drifts, vent	476	27 7 2¾	2 12 6¼	14 – 9	44 – 6	49 6 3
827	6 January 1868 (G. 48—159.)	Gauges, vent, sets of 4	10	12 6 4	– 11 10¼	6 6 4	19 4 6¼	21 10 8¼
834	15 March 1867 (G. 45—58.)	Instruments for taking impressions of vents, N. P.	14	66 13 1½	11 1 1¾	34 2 3	111 16 6¼	125 5 3¼
835	15 March 1867 (G. 45—58.)	Instruments for taking impressions of bores, N. P. with screws.	12	195 – 7¾	40 17 6½	100 1 –	335 19 2¼	376 6 6¼

836	12 November 1867 (G. 48—135.)	Irons, priming, S. S.	1,169	22 14 9½	2 10 5¾	11 13 4	36 18 7¼	41 7 4¼
837	15 March 1867 (G. 45—58.)	- ditto - garrison	843	55 9 11½	8 12 6¾	28 9 5	92 11 11¼	103 14 5¼
820	23 July 1866 (G. 32—452; 80—S.—268.)	Fitting guns with steel cup	2	1 1 –½	– 15 6½	– 9 –	2 5 7	2 11 1
824	2 June 1866 (G. 32—397.)	Fitting iron and bronze ordnance, with sights, vents, and other fittings, as required from time to time:						
		Iron—68-pounders	26					
		„ 32-pounders	219					
		„ 18-pounders	6					
		„ 6-pounders	2					
		„ 24-pounders	35	736 18 1	89 18 –¼	378 5 9¾	1,205 1 11	1,349 17 7
		Bronze—6-pounders	29					
		„ 9-pounders	19					
		„ 12-pounder howitzers	69					
		„ 24-pounder howitzers	49					
825	- - - - -	Fitting scales to iron howitzers	- -	– 7 2	- -	– 3 8	– 10 10	– 12 2
847	17 January 1867 (G. 45–104; 57—Colombo–572.)	Machines for sighting guns	2					
		Also making additional articles, as under:						
		Drifts, sighting	9	23 3 6½	11 18 11¾	11 17 10	47 – 4¼	52 13 4¼
		Plummets, lead	12					
		Plummets, brass	12					
		Spirit levels	2					
852	15 March 1867 (G. 48—91; 73—3—8001.)	Plates, guide	310	14 19 10	1 4 3¼	7 13 10	23 17 11¼	26 15 4¼
853	15 March 1867 (G. 45—58; 73—3—8001.)	Plugs, vent, india rubber	8,800	14 11 11	27 14 11	7 9 9	49 16 7	55 16 4
855	15 March 1867 (G. 45—58.)	Prickers, vent	638	37 1 7¼	3 3 10¾	19 – 5	59 5 11	66 8 5
860	13 February 1861 (G. 48—73; 57—Woolwich—3156.)	Repairing small stores, crutches, pendulums, brass, scales, tangent, &c.	- -	98 8 11½	11 10 4¾	50 10 11	160 10 3¼	179 16 –¼

No. 2.—Royal Gun Factories, Woolwich Arsenal—Statement (F.) Manufacture of Fittings and Spare Articles for Smooth-Bore Ordnance—*continued.*

Number of Order.	AUTHORITY.	DESCRIPTION.	Number Made.	Labour.	Material.	General Expenses.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		Fitting iron and bronze ordnance, with sights, vents, and other fittings, as required from time to time—*continued.*		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
863	15 March 1867 (G. 39—550, and 45—58.)	Scales, tangent, wood, L. S.	300	75 16 2¾	9 – 10	38 17 10	123 14 10¾	138 12 1¾
864	15 March 1867 (G. 45—58.)	Scrapers, vent	33	1 18 8½	– 4 9¼	– 19 10	3 3 3¾	3 10 11¾
871	15 March 1867 (G. 45—58, and 39—550.)	Screws, fixing, various	2,985	22 7 2¼	6 10 4¾	11 8 –	40 5 7	45 2 4
873	15 March 1867 (G. 45—58, and 39—550.)	Screws, copper, sets	245	4 4 2¾	1 5 7	2 3 2	7 12 11¾	8 11 3¾
874	15 March 1867 (G. 45—58, and 39—550.)	Screws, preserving	2,243	27 10 3¼	4 5 1	14 2 5	45 17 9¼	51 8 –¼
877	15 March 1867 (G. 45—58.)	Searchers, spring, various	12	1 3 4½	– 3 7	– 12 –	1 18 11½	2 3 7½
878	4 December 1867 (G. 32—452.)	Sights, hexagon, various, engraved	26	3 5 –	– – –	1 13 4	4 18 4	5 10 2
879	15 March 1867 (G. 39—550, and 45—58.)	Sights, hind, Millar's, L. S., made " " " " engraved	353 97	96 16 11	24 7 –¼	49 13 8	170 17 7¼	191 8 2¼
880	15 March 1867 (G. 39—550, and 45—58.)	Sights, fore	366	8 12 11½	32 18 5	4 8 9	46 – 1½	51 10 8½
882	15 March 1867 (G. 39—550.)	Slides, long, wood	4	– 1 8	– – –	– – 10	– 2 6	– 2 10
883	15 March 1867 (G. 45—58, and 39—550.)	Spikes, spring, various	823	19 14 8	4 11 5	10 1 –	34 7 1	38 9 8
890	15 March 1867 (G. 39—550, and 45—58.)	Scales, tangent, brass, various	282	59 17 5¼	12 14 2¾	29 – 9	101 12 5	113 16 7
891	17 January 1868 (G. 48—159.)	Taps, grinding, scrapers	9	1 1 2	– 8 3	– 10 10	2 – 3	2 5 1
892	15 March 1867 G. 45—58.)	Vents, copper, various	1,465	92 10 11½	171 7 4	46 15 8	310 13 11½	348 – 6½
889	17 January 1868 (G. 48—159.)	Tools, grinding, searcher points	7	1 18 7	– 6 6	– 19 9	3 4 10	3 12 8

			Manufacturing tools for venting guns, including the preparation of tools, &c., also spare articles, as follows:							
888	15 March 1867 (G. 45—58.)	Braces, drilling	4	107 6 11½	76 4 11½	55 1 5	238 13 3¾	267 6 9¾
	24 May 1867 (G. 45—123.)	Bar, iron, with spring	2					
	31 May 1867 (G. 45—128.)	Burnishers	3					
		Collars, cast iron	7					
		Cone drills	3					
		Cutters and knives for metal heads	7					
		Drifts	14					
		Drills	8					
		Hammers, hand	3					
		Heads, metal, for knives	17					
		Knives	15					
		Machines, drilling	1					
		Muzzle collar	1					
		Rimers, for cone	13					
		Saws, with frame	7					
		Taps	30					
		Levers, iron	2					
		Wrenchers, for cutters	1					
		TOTAL £.		1,872 13 5¼	575 19 2	957 11 3¾	3,406 3 11	3,815 8 10

(Examined) *James C. Hurst,*
Accountant, and Auditor to the Manufacturing Departments.

No. 2.—Royal Gun Factories, Woolwich Arsenal—*continued.*

STATEMENT (G.)—Additions to Plant of the Department during the Year 1867–8.

	£.	s.	d.
Labour	3,336	2	4¼
Material	1,500	8	3
Indirect Expenses	1,711	8	4
Total per Balance Sheet, No. 1 £.	6,547	18	11¼
Total per Balance Sheet, No. 2 £.	7,334	13	5¼

Number of Order.	AUTHORITY.	DESCRIPTION.	Labour. £. s. d.	Material. £. s. d.	General Expenses. £. s. d.	TOTAL COST per Balance Sheet, No. 1. £. s. d.	TOTAL COST per Balance Sheet, No. 2. £. s. d.
905	- - - - -	Making the necessary additions to large lathes, to adapt them to the manufacture of 10 in., 11 in., and 12 in. guns.	358 19 4½	54 17 9¼	184 3 –	598 – 1¾	669 17 1¾
907	- - - - -	Preparing and casting metal bushes, &c. for engine for driving rolling mill; also tank for fly wheel and steam pipes, coiling and welding bush to thicken up portion of the wrought-iron crank shaft of steam engine for driving mill, removing fly wheel shaft from Dial Square to Forges, and fixing in its proper place, preparing and casting gun metal bends and pipes for connecting the engine and boilers for driving the rolling mill.	116 8 –¾	38 10 7	59 14 3	214 12 10¾	240 8 7¾
1,023	- - - - -	Making four furnaces in the Old Forge for puddling cast iron -	109 16 3½	130 3 8¼	56 6 8	296 6 7¾	331 18 8¾
1,035	- - - - -	Moulding and casting plates for two furnaces and two chimneys for use of the 10-ton hammer; also plates, bars, columns, and hoppers for large furnace.	218 8 3	229 19 1½	112 – 11	560 8 3½	627 14 11½
1,058	11 October 1867 - -	Preparing, fitting, and erecting a travelling crane, girders, &c., in No. 16 store, to be used for sighting and examining guns.	70 10 6	138 19 9	36 3 7	245 13 10	275 4 3

1,059	22 November 1867 - -	Casting and turning four pairs of rolls for the rolling mill, and casting floor and guide plates for the same; also forging carrying bars, tongs, &c., preparing and casting columns and coping for hand rail of fly wheel and engine at rolling mill.	313 1 10¾	318 16 9½	160 12 4	792 11 –¼	887 15 5¼
1,067	- - - - -	Preparing and casting steam blow-off pipes, removing four steam boilers from Old Forge, and two from Dial Square, replacing the same with new boilers, and fixing complete.	370 8 1⅓	45 17 6¾	190 – 4	606 6 –¼	679 2 11¼
1,070	21 November 1867 -	Preparing crane of 12-ton hammer, including making patterns and casting steam cylinders and back plates for crane slewing gear, and fitting up the same, fitting together steam engine for crane at large coiling machine.	768 18 2	215 4 11¾	394 9 –	1,378 12 1¾	1,544 4 10¾
1,071	5 March 1868 - -	Preparing wheels and brackets, and erecting loammill at Dial Square	19 4 6	8 13 10¼	9 17 3	37 15 7¼	42 6 4¼
1,106	- - - - -	Fitting in new boilers at the Gun Boring Mill - - - -	132 1 1¼	8 – 6	67 14 10	207 16 5¼	232 15 10¼
1,107	- - - - -	Erecting large boring machine at the Gun Boring Mill - -	55 17 –⅓	- - -	28 13 –	84 10 –½	94 13 1½
1,118	- - - - -	Preparing girders, &c., for the foundation of rolling mill engine -	15 11 7	2 17 6¼	7 19 10	26 8 11¼	29 12 6¼
1,126	18 January 1867 - -	Moulding and casting foundation plates, &c., for 10-ton steam hammer; removing and fitting the same.	786 17 5½	303 6 1½	403 13 4	1,498 16 11	1,678 18 7
		TOTAL - - - £.	3,336 2 4¼	1,500 8 3	1,711 8 4	6,547 18 11¼	7,334 13 5¼

(Examined) *James C. Hurst,*
Accountant, and Auditor to the Manufacturing Departments.

No. 2.—Royal Gun Factories, Woolwich Arsenal—*continued.*

STATEMENT (H.)—CAPITAL ACCOUNT of the Royal Gun Factories, 1867–8.

Dr.

	£. s. d.	£. s. d.
To Balance:		
For Net Amount of Capital on 1st April 1867:		
Lands	2,805 9 4	
Buildings	77,331 16 1	
Machinery	153,804 7 3	233,941 12 8
For Net Amount of Capital, Proof Department, on 1st April 1867:		
Buildings	10,024 19 11	
Machinery	1,035 – –	11,059 19 11
To Army Supplies, 1867–68:		
For Amount expended during the Year:		
Buildings	10,647 15 1	
Machinery:		
Contract	12,410 9 –	
Other Sources	15 – –	23,073 4 1
For Amount expended during the year for Proof Department:		
Buildings	346 1 11	
Machinery	50 – –	396 1 11
To Production Account:		
For Amount added during the Year:		
Machinery		6,547 18 11¼
	£.	275,018 17 6¼

Cr.

	£. s. d.	£. s. d.
By Productions, 1867–68:		
For one Year's Depreciation on Plant, viz.:		
Five per cent. on Buildings (77,331 *l.* 16 *s.* 1 *d.* per contra)	3,866 11 10½	
Ten per cent. on Machinery (153,804 *l.* 7 *s.* 3 *d.* per contra)	15,380 8 8¾	19,247 – 7¼
By Productions, Proof Department:		
Five per cent. on Buildings (10,024 *l.* 19 *s.* 11 *d.* per contra)	501 5 –	
Ten per cent. on Machinery (1,035 *l.* per contra)	103 10 –	604 15 –
By Sundry Departments:		
For Value of Machinery transferred to Principal Superintendent of Stores		223 10 –
By Balance:		
For Net Amount of Capital on 31st March 1868:		
Lands	2,805 9 4	
Buildings	84,112 19 3½	
Machinery	157,173 16 5½	244,092 5 1
For Net Amount of Capital, Proof Department, on 31st March 1868:		
Buildings	9,869 16 10	
Machinery	981 10 –	10,851 6 10
	£.	275,018 17 6¼

H. W. S. Whiffin, Chief Auditor of Army Accounts.

F. A. Campbell, Colonel, R.A., Superintendent.

— No. 3. —

ROYAL LABORATORY, WOOLWICH ARSENAL.

(A.)—BALANCE SHEET, No. 1, of the Royal Laboratory, Royal Arsenal, Woolwich, 1867–8.

Dr.

	£. s. d.	£. s. d.
To Balance:		
For Stores in Stock on 1st April 1867 - - - - - -	94,738 7 10	
For manufactured and semi-manufactured Articles in Stock on the 1st April 1867 - - - -	47,729 1 2	
For Floating Stock on 1st April 1867	10,817 9 9	153,284 18 9
To Army Supplies, 1867–8:		
For Cash advanced through the Paymaster General, and expended on the following Services during the Year:		
Salaries - - - - - -	5,304 – 7	
Wages - - - - - -	185,452 1 10	
Wages of Men invalided on Medical Certificate - -	1,589 14 2	
Miscellaneous Services - -	509 12 5	
Stores, Materials, &c. - -	204,964 10 4	
New Machinery - - -	25,449 4 6	
New Buildings - - -	14,059 10 4	
Gas - - - - - -	2,175 2 6	
Repairs to Gas Fittings - -	646 17 8	
Water - - - - - -	175 – –	
Police - - - - - -	1,417 3 –	
Horses, Carts, Drivers - -	1,196 8 9	
Divine Service - - -	89 19 6	
Chemical Department - -	250 – –	
Medical Department - -	487 6 6	
Works Department - -	755 – –	
Library - - - - - -	16 12 10	
Schools - - - - - -	315 1 11	
Military Pay of Officers - -	765 – –	
Superannuations - - -	2,314 18 3	
Gratuities to Workmen - -	48 – –	
Repairs to Buildings - -	2,416 7 11	450,397 13 –
To Miscellaneous Services, 1867–8:		
For Expenditure not defrayed out of Army Supplies:		
Stationery - - - - -	321 19 7	
Rates - - - - - -	400 – –	
Rental of Quarters - - -	220 – –	941 19 7
To Sundry Departments:		
For Stores, &c. received from various sources - - - - - -	127,068 13 9	
For Machinery - ditto - ditto -	1,373 5 –	128,441 18 9
	£.	733,066 10 1

Cr.

	£. s. d.	£. s. d.
By Balance:		
For Stores in Stock on 31st March 1868 - - - - - -	60,566 8 6	
For manufactured and semi-manufactured Articles on hand on 31st March 1868, viz:		
For Projectiles - - -	9,625 1 11	
For Barrels, Cases, and Boxes	701 9 4	
For Ammunition:		
Small Arm - - -	1,908 6 1	
Iron Ordnance - - -	3,744 15 2	
For Miscellaneous Stores -	21,937 15 –	
For Floating Stock on 31st March 1868 - - - - - -	10,699 10 1	109,183 6 1
By Capital Account:		
For New Buildings added during the Year - - - - - -	14,059 10 4	
For New Machinery added during the Year - - - - -	26,822 9 6	40,881 19 10
By Production Account:		
For Miscellaneous Services performed during the Year, as per Statement (C.) - - - - - -	53,615 16 –	
For Articles manufactured during the Year, as per Statement (D.):		
Projectiles - - - -	135,401 4 –	
Barrels, Cases, and Boxes -	12,999 1 1	
Ammunition:		
Small Arm - - - -	283,819 11 2	
Iron Ordnance - - -	46,953 11 6	
Miscellaneous Stores - - -	15,940 3 8	548,729 7 5
By Sundry Departments:		
For Stores, &c. issued during the Year - - - - - -	- - -	34,271 16 9
		733,066 10 1

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

E. M. Boxer, Colonel, R.A.,
Superintendent.

No. 3.—Royal Laboratory, Woolwich Arsenal—*continued.*

(B.)—BALANCE SHEET, No. 2, of the Royal Laboratory, Royal Arsenal, Woolwich, 1867-8.

Dr.

	£. s. d.	£. s. d.
To Balance:		
For Stores in Stock, 1st April 1867 -	94,738 7 10	
For manufactured and semi-manufactured Articles in Stock, 1st April 1867 -	47,729 1 2	
For Floating Stock, 1st April 1867 - -	10,817 9 9	153,284 18 9
To Army Supplies, 1867-8:		
For Cash advanced through the Paymaster General, and expended on the following Services during the Year, viz:		
Salaries - - - - - -	5,304 – 7	
Wages - - - - - - -	185,452 1 10	
Wages to Men invalided on Medical Certificate - - - - -	1,589 14 2	
Miscellaneous Services - - -	509 12 5	
Stores, Materials, &c. - - -	204,964 10 4	
New Machinery - - - -	25,449 4 6	
New Buildings - - - -	14,059 10 4	
Gas - - - - - - -	2,175 2 6	
Repairs to Gas Fittings - - -	646 17 8	
Water - - - - - - -	175 – –	
Police - - - - - - -	1,417 3 –	
Horses, Carts, Drivers, &c. - -	1,196 8 9	
Divine Service - - - -	89 19 6	
Chemical Department - - -	250 – –	
Medical Department - - -	487 6 6	
Works Department - - -	755 – –	
Library - - - - - -	16 12 10	
Schools - - - - - -	315 1 11	
Military Pay of Officers - - -	765 – –	
Superannuations - - - -	2,314 18 3	
Gratuities to Workmen - - -	48 – –	
Repairs to Buildings - - -	2,416 7 11	450,397 13 –
To One Year's Interest, at 3½ per Cent. on Invested Capital, in—		
Stores and manufactured and semi-manufactured Articles in Stock on 31st March 1867 - - £. 153,284 18 9		
Land - - - - £. 11,686 14 4		
Buildings - - - £. 91,772 4 8		
Machinery - - - £. 147,965 6 5		
£. 404,709 4 2	14,164 16 5	
To One Year's Interest at 3½ per Cent. on Working Capital, viz., one-fifth of Annual Expenditure - - - - -	4,058 9 5	
To Depreciation, 5 per Cent. on Buildings, and 10 per Cent. on Machinery, as per Capital Account - - - - -	19,385 2 11	37,608 8 9
To Miscellaneous Services, 1867-8:		
For Expenditure not defrayed out of Army Supplies:—		
Stationery - - - - - -	321 19 7	
Rates - - - - - - -	400 – –	
Rental of Quarters - - -	220 – –	941 19 7
To Sundry Departments:		
For receipts from various sources during the Year:—		
Stores, &c. - - - - - -	127,068 13 9	
Machinery - - - - - -	1,373 5 –	128,441 18 9
	£.	770,674 18 10

Cr.

	£. s. d.	£. s. d.
By Balance:		
For Stores in Stock on 31st March 1868 - - - - - -	60,566 8 6	
For manufactured and semi-manufactured Articles on hand on 31st March 1868, viz:		
For Projectiles - - -	9,625 1 11	
For Barrels, Cases, and Boxes - - - -	701 9 4	
For Ammunition:		
Small Arm - - -	1,908 6 1	
Iron Ordnance - -	3,744 15 2	
For Miscellaneous Stores -	21,937 15 –	
For Floating Stock on 31st March 1868 - - - - - -	10,699 10 1	109,183 6 1
By Capital Account:		
For New Buildings added during the Year - - - -	14,059 10 4	
For New Machinery added during the Year - - - -	26,822 9 6	40,881 19 10
By Production Account:		
For Miscellaneous Services performed during the Year, as per Statement (C.) - - -	57,301 16 9	
For Articles manufactured during the Year, as per Statement (D.), viz:		
Projectiles - - -	144,710 – 4	
Barrels, Cases, and Boxes -	13,892 14 8	
Ammunition:		
Small Arm - - -	303,215 11 5	
Iron Ordnance - -	50,181 11 10	
Miscellaneous Stores -	17,036 1 2	586,337 16 2
By Sundry Departments:		
For Stores, &c. issued during the Year - - - - - -	- -	34,271 16 9
	£.	770,674 18 10

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

E. M. Boxer, Colonel, R.A.,
Superintendent.

No. 3.—ROYAL LABORATORY, WOOLWICH ARSENAL—*continued.*

STATEMENT (C.)—MISCELLANEOUS SERVICES performed in the DEPARTMENT during the Year 1867-8.

DESCRIPTION OF SERVICE.	Cost per Balance Sheet, No. 1.			Cost per Balance Sheet, No. 2.		
	£.	s.	d.	£.	s.	d.
Bookbinding for other Departments	7	3	10	7	13	8
Filling Cannon Cartridges with Powder for Military Store Department	6,843	3	10	7,313	13	2
Instructing Military	1,378	2	2	1,472	17	1
Making Paste for Military Store Department	1	–	11	1	2	4
Printing for other Departments	21	–	4	22	9	2
Filling Shells with Powder for Military Store Department	711	4	11	760	2	10
Painting Shot and Shell for Military Store Department	1,372	14	6	1,467	2	–
Proving, Examining, and Packing Stores after manufacture	14,944	9	3	15,971	17	11
Examining and Breaking-up Returned Stores	2,860	–	9	3,056	13	3
Selecting Stores in charge of Principal Superintendent of Stores	195	19	3	209	8	8
Repairs of Stores for Military Store Department	8,870	5	4	9,480	1	11
Expenditure on Experimental and Special Material for Ordnance Select Committee	13,274	9	8	14,187	2	–
Expenditure on Experimental and Special Material for Gun Cotton Committee	230	3	4	245	19	9
Expenditure on Experimental and Special Material for Floating Obstruction Committee	81	17	9	87	10	3
Expenditure on Experimental and Special Material for Her Majesty's Ships "Cambridge" and "Excellent"	248	12	2	265	14	–
Expenditure on Experimental and Special Material for Special Work for Principal Superintendent of Stores	28	19	4	30	19	1
Expenditure on Experimental and Special Material for Royal Engineer Committee	–	18	4	–	19	6
Expenditure on Experimental and Special Material for Royal Artillery, at Sheerness	7	14	2	8	4	9
Expenditure on Experimental and Special Material for Royal Artillery, at Dover	7	17	10	8	8	8
Expenditure on Experimental and Special Material for Royal Artillery, at Gibraltar	7	14	2	8	4	9
Expenditure on Experimental and Special Material for Royal Artillery, at Portsmouth	7	14	2	8	4	9
Instruction of Officers proceeding to Abyssinia	8	15	5	9	7	5
Work performed for Chemical Department	58	11	5	62	11	11
Persons employed at Medical Department	166	4	4	177	12	10
Man attending Proof of Ordnance	28	18	4	30	18	1
Making Patterns, &c. for Pattern Room	110	6	3	117	18	9
Work performed for Royal Engineer Department	1	8	3	1	10	2
Work performed for Devonport Royal Laboratory	138	3	10	147	13	10
Packing Gunpowder previous to Issue to Principal Superintendent of Stores	4	2	2	4	7	10
Duplicate Patterns for Out-stations	13	14	6	14	13	4
Work performed for the Portsmouth Ordnance Factory	76	9	8	81	14	9
Men's Time, &c. while employed at the Paris Exhibition	25	10	2	27	5	2
Examining Projectiles at Elswick for the Egyptian Government	71	18	1	76	16	9
Fitting a Crane for Land Magazine, Military Store Department	59	9	4	63	11	1
Specimens of various Articles for Museum of Science and Art, Edinburgh	33	18	3	36	4	10
Men repairing Boilers at Royal Carriage Department	10	–	6	10	14	3
Primers, &c. for Torpedo Instruction, for Royal Engineer Department, Chatham	65	1	5	69	10	10
Guide Pulley for Hydraulic Machinery, Military Store Department	–	14	2	–	15	2
Pellet Powder for Issue on general Demand	12	6	11	13	3	11
Work performed for Gosport Royal Laboratory	5	14	2	6	2	–
Carbons, &c. for use in Proof of Powder for Indian Government	50	6	9	53	15	10
Fittings, &c. for Hydraulic Engines, Military Store Department	18	13	1	19	18	9
Erecting a Guard round No. 5 Steam Engine, Military Store Department	30	17	7	33	–	–
Assistance given to Chemical Department in taking Photographs of Machines for Manufacture of Boxer Cartridges	11	1	8	11	16	10
Tools and Apparatus for Manufacture of Boxer Cartridges for India Store Department	1,277	9	8	1,365	6	2
Holders for Breech-loading Rifle Rests for Firemasters at various Stations	223	19	7	239	7	7
Work on Torpedoes for Her Majesty's Ships	1	13	–	1	15	3
Altering Shafting for Messrs. Hicks, Hargreaves, & Co.	9	1	6	9	13	11
TOTAL £.	53,615	16	–	57,301	16	9

E. M. Boxer, Colonel, R.A.,
Superintendent, Royal Laboratory.

(Examined) *James C. Hurst*,
Accountant, and Auditor to the Manufacturing Departments.

No. 3.—Royal Laboratory, Woolwich Arsenal—*continued.*

(D.)—STATEMENT of Stores manufactured in this Department, and issued to the Principal Superintendent of Stores during the Year 1867–68.

DESCRIPTION OF ARTICLES.	Number or Quantity.	Cost per Balance Sheet, No. 1.	Cost per Balance Sheet, No. 2.
		£. s. d.	£. s. d.
Adapters, General Service - Whole, R.O.	100,007	2,002 4 6	2,139 18 3
Adapters, General Service - S.B., whole	5	– 1 9	– 1 10
Bags:			
For Iron Cases - Canvas - Half	40	3 10 –	3 14 10
For Iron Cases - Canvas - Quarter	126	8 1 6	8 12 2
For Iron Cases - Flannel - Half	40	3 12 7	3 17 5
For Iron Cases - Flannel - Quarter	126	8 7 –	8 18 6
Paper Bursters for Shells - No. 4, to contain 70 drs. to 13 oz.	6,506	4 8 9	4 14 7
Paper Bursters for Shells - No. 2, to contain 20 drs. to 30 drs.	2,700	1 10 9	1 12 9
Paper Bursters for Shells - No. 1, to contain 20 drs. and under	9,500	5 6 3	5 13 6
Canvas, Instruments extracting Projectiles 9, 8, 7 inch and 64 pounders	457	41 6 3	44 3 2
Paper, Waterproof, for - Primers	1,000	1 7 5	1 9 2
Paper, Waterproof, for - Armstrong Fuzes - Percussion	39,100	38 13 10	41 6 10
Paper, Waterproof, for - Armstrong Fuzes - Time	25,953	26 16 1	28 12 10
Paper, Waterproof, for - Small Arm Cartridges, Musket 53 pattern, and Artillery Carbine	10,000	17 9 2	18 13 2
Worsted Shalloon, for Blowing Charges, 4 oz.	700	23 18 9	25 11 8
Serge, Blue, for 15 Blank 3½-drs., Cartridges	100	1 1 3	1 2 8
Balls:			
Light Parachute - 10-inch, whole	15	37 13 6	40 5 3
Light Parachute - 8-inch	21	40 1 6	42 16 7
Light Parachute - 5½-inch	1	1 9 8	1 11 8
Barrels - Cartridge - Quarter	1	– 4 4	– 4 8
Barrels - Cartridge - Eighth	1	– 3 –	– 3 3
Barrels - Powder, whole	2	1 2 1	1 3 7
Barrels - Powder, whole	1,316	195 13 –	209 2 2
Barrels - Ditto ditto, Teak	101	89 18 5	96 2 3
Barrels - Ditto ditto, Teak	1	– 16 6	– 17 7
Barrels - Ditto ditto, Teak	1	– 10 5	– 11 1
Beams for Lifting Shell - Rough	–	—	—
Beams for Lifting Shell - Turned	–	—	—
Boards - Rolling	10	– 5 –	– 5 4
Boards - Rounding	2	– 2 –	– 2 2
Bottoms, Wood, Shot, or Shell:			
Elm, Common Cylindrical, 9-pounder	500	2 6 9	2 9 10
Teak, Common, Hemispherical - 5½-inch	1,000	25 15 –	27 11 9
Teak, Common, Hemispherical - 4⅔-inch	1,000	18 1 8	19 6 5
Boxes:			
Tin - Fuze - Armstrong, percussion	39,100	303 11 9	324 9 1
Tin - Fuze - Armstrong, time	11,985	106 14 9	114 1 6
Tin - Fuze - 7 pr. M. L. 10″ and 5″	72	14 12 4	15 12 3
Tin - Fuze - 7 pr. M. L. 15″	24	4 17 5	5 4 1
Tin - Boat, Magazine	118	9 5 4	9 18 1
Tin - Boxer, life-saving apparatus	176	22 8 9	23 19 6
Tin - Tube	150	5 6 2	5 13 5
Tin - Tube, 6-pounder Hale Rocket	16	– 11 4	– 12 1
And Cases, Wood	–	2,817 15 1	3,011 9 6
Braces, Iron ratchet	6	– 18 11	1 0 3
Buckets, Sponge	135	10 12 7	11 7 –
Bursters:			
For Shell, Iron filled - 12-pounder	14,500	332 2 10	354 19 4
For Shell, Iron filled - 6-pounder	5,600	87 7 2	93 6 10
Caps:			
Metal Fuze	7	– 3 6	– 3 9
Percussion, Service Pattern, 64. A	33,600	7 10 –	8 – 3
Tin, Fuze - Large	300	– 13 4	– 14 3
Tin, Fuze - Small	800	– 15 –	– 16 –

No. 3.—Royal Laboratory, Woolwich Arsenal—(D.) Statement of Stores, &c.—*continued.*

DESCRIPTION OF ARTICLES.		Number or Quantity.	Cost per Balance Sheet, No. 1. £. s. d.	Cost per Balance Sheet, No. 2. £. s. d.
Carcasses:				
Loose, Empty, prepared for Bottoms	10-inch	800	198 7 –	211 19 7
	8-inch	1,100	152 2 3	162 11 3
Cartridges:				
Calico, Bursters, Empty	No. 6, to contain above 2½ to 4 lbs.	4	– – 4	– – 4
	No. 4, to contain above 70 drams to 13 oz.	6	– – 6	– – 6
	No. 1, to contain 20 drams or under	1,800	2 18 6	3 2 6
Calico, Bursters, Filled with Coal-dust	Boxer Shrapnel, M. L., 7-pounder, 8 drams	1	– – 1	– – 1
	Common, 12 or 7-pounder, M. L., 7 oz.	16	– 1 5	– 1 6
	Diaphragm Shrapnel, 24-pounder, 40 drams	4	– – 3	– – 3
Drill, Dummy B. L.	7-inch	64	21 6 3	22 15 6
	64-pounder	16	5 6 6	5 13 9
	40-pounder, Land Service	74	23 1 11	24 13 7
Drill, Dummy, M. L., Naval	9-inch	5	4 2 10	4 8 6
	8-inch	5	3 9 5	3 14 2
	7-inch	30	17 9 –	18 13 –
Drill, Dummy, B. L.	12-pounder	102	13 6 9	14 5 –
	6 pounder	24	2 13 9	2 17 5
Flannel, Blue, for Drill, Gun, Coal-dust	18-inch	16	– 18 1	– 19 3
	150-pounder, 40 lbs.	10	1 11 7	1 13 8
	68-pounder	20	1 7 7	1 9 5
	42-pounder	25	1 15 10	1 18 3
	32-pounder	238	12 1 1	12 17 7
	24-pounder	36	1 9 –	1 11 –
	18-pounder	4	– 2 –	– 2 2
	12-pounder	3	– 1 11	– 2 1
	9-pounder	12	– 6 7	– 7 –
Flannel, Blue, for Drill, Coal-dust, Howitzer	24-pounder	4	– 2 4	– 2 6
	12-pounder	8	– 3 7	– 3 10
Shalloon, Coal-dust, 7-pounder, M. L., 3 oz.		5	– – 4	– – 4
Flannel, Gun, Coal-dust, M. L.	9-inch, 43 lbs.	5	– 8 4	– 8 11
	7-inch, 22 lbs.	2	– 2 3	– 2 5
	7-inch, 18 lbs.	1	– 1 8	– 1 9
	7-inch, 14 lbs.	2	– 1 11	– 2 1
	64-pounder, 8 lbs.	1	– – 7	– – 7
	64-pounder, 6 lbs.	1	– – 6	– – 6
	7-pounder, 6 oz.	21	– 5 5	– 5 9
	7-pounder, 8 oz.	21	– 4 10	– 5 2
Flannel, Coal-dust, Gun	150-pounder, 40 lbs.	1	– 1 10	– 2 –
	100-pounder, 25 lbs.	1	– 1 7	– 1 8
	32-pounder, 6 lbs.	1	– – 5	– – 5
	32-pounder, 4 lbs.	1	– – 5	– – 5
	32-pounder, 2½ lbs.	1	– – 4	– – 4
	32-pounder, 10 lbs.	8	– 4 5	– 4 9
	24-pounder, 8 lbs.	4	– 2 –	– 2 2
Flannel, Dummy, M. L., 10-inch	60 lbs.	2	– 7 9	– 8 4
	40 lbs.	3	– 9 1	– 9 9
	20 lbs.	4	– 10 8	– 11 4
Flannel, Empty, B. L., Exercise	7-inch, 7 lbs.	50	1 10 11	1 12 11
	20 pounder, 1½ lb.	3,000	57 4 8	61 3 1
	12 or 9 pounder, 1 lb.	21,926	291 7 9	311 8 3

No. 3.—Royal Laboratory, Woolwich Arsenal—(D.) Statement of Stores, &c.—*continued.*

DESCRIPTION OF ARTICLES.			Number or Quantity.	Cost per Balance Sheet, No. 1.	Cost per Balance Sheet, No. 2.
Cartridges, Flannel, Empty—*continued.*				£. s. d.	£. s. d.
	7-inch B. L.	11 lbs.	15,110	651 5 6	696 1 –
	64-pounder B. L.	8 „	50	1 17 10	2 – 5
		8½ „	2,000	75 13 9	80 18 2
„ Service	40 „ „	5 „ L. S.	20,000	879 2 8	939 12 6
		5 „ S. S.	11,110		
	20 „ „	2½ „	21,450	482 6 9	515 9 11
	12 „ „	1½ „	100	1 10 7	1 12 7
	9 „ „	1 2/16 „	5,100	74 16 –	79 18 9
	6 „ „	¾ „	2,300	26 14 1	28 10 9
„ Proof	64 „ „	13 „	60	2 10 5	2 13 10
	40 „ „	7½ „	40	1 6 –	1 7 9
	12 „ „	2 „	250	5 9 7	5 17 1
	9 „ „	1 lb. 6 oz.	200	3 9 9	3 14 6
	6 „ „	1 „ 2 „	200	2 17 6	3 1 5
Gun	150 „	20 lbs.	500	30 4 11	32 6 6
	100 „	25 „	900	61 4 1	65 8 5
	100 „	12 „	800	32 4 –	34 8 3
	15-inch	80 „	10	1 5 3	1 7 –
	8 „	5 „	39,800	1,014 13 6	1,084 8 9
	68-pounder	25 „	20	1 – 9	1 2 2
	32 „	6 „	125	2 8 5	2 11 8
		4 „	17,250	292 5 4	312 7 2
		2½ „	625	9 3 3	9 15 10
	24 „	5 „	2,000	36 9 8	38 19 9
	18 „	3 „	3,300	54 11 9	58 7 9
		1½ „	50	– 16 10	– 17 11
	12 „	4 „	4,500	75 4 10	80 8 3
		3 „	1,900	26 8 5	28 4 8
		2½ „	1,600	20 9 1	21 17 2
	6 „	2 „	2,000	23 1 6	24 13 3
		1½ „	10,000	97 13 8	104 7 11
	4 „	1 „	80	– 14 2	– 15 1
Gun, M. L.	13-inch	70 „	120	12 5 4	13 2 2
		50 „	84	7 15 7	8 6 3
	12 „	70 „	382	44 13 1	47 14 5
		50 „	240	23 17 6	25 10 4
	9 „	53¾ „	138	11 13 4	12 9 4
		43 „	8,645	630 10 10	673 17 9
		30 „	15,360	931 10 5	995 10 –
		15 „	2,050	101 5 4	108 4 7
	8 „	37½ „	60	3 17 10	4 3 2
		30 „	6,300	373 13 4	399 8 1
		20 „	7,500	323 11 2	345 16 –
		12 „	1,250	44 16 7	47 18 2

No. 3.—Royal Laboratory, Woolwich, Arsenal—(D.) Statement of Stores, &c.—*continued.*

DESCRIPTION OF ARTICLES.	Number or Quantity.	Cost per Balance Sheet, No. 1.	Cost per Balance Sheet, No. 2.
Cartridges, Flannel, Empty—*continued.*		£. s. d.	£. s. d.
Gun, M. L. - 7-inch - - - - - 10 lbs. - -	5,000	149 12 11	159 18 8
Gun, M. L. - 7 " - - - - - 27½ " - -	476	27 3 3	29 – 7
Gun, M. L. - 7 " - - - - - 22 " - -	17,100	953 13 8	1,019 4 11
Gun, M. L. - 7 " - - - - - 18 " - -	105	5 17 1	6 5 1
Gun, M. L. - 7 " - - - - - 14 " - -	30,145	1,229 10 9	1,314 1 4
Gun, M. L. - 6·3 " - - - - - 14 " - -	750	28 17 4	30 17 –
Gun, M. L. - 5·72 " - - - - - 8 " - -	300	9 18 4	10 11 3
Gun, M. L. - 5·72 " - - - - - 7 " - -	900	29 15 –	31 15 7
Gun, M. L. - 64-pounder - - - - 10 " - -	318	10 7 1	11 1 3
Gun, M. L. - 64-pounder - - - - 8 " - -	36,650	1,034 12 –	1,105 14 7
Gun, M. L. - 64-pounder - - - - 6 " - -	24,000	570 15 10	610 – 7
Gun, M. L. - 12 " - - - - - 2 lb. 2 oz. -	8	– 2 11	– 3 2
Gun, M. L. - 7 " - - - - - 12½ " -	46	– 8 4	– 8 11
Gun, M. L. - 7 " - - - - - 6 " -	12,012	86 14 3	92 13 5
Gun, M. L., 10-inch - - - - - - - 75 lbs. - -	16	1 13 6	1 15 10
Howitzer, 12-pounder - - - - - - - 1 " 4 oz. -	1,140	13 7 1	14 5 5
Mortar, Cohorn - - - - - - - - 1 lb. - -	1,096	10 3 7	10 17 7
Shalloon, Empty, 7-pounder, M. L. Gun - - - 3 oz. -	1,020	28 1 8	30 – 3
Cartridges, Small Arm:			
Ball, Coal-dust - Carbine, rifled - Artillery and cavalry, 2 drs., clay plug - In waterproof bags	30	– 1 1	– 1 2
Ball, Coal-dust - Carbine, rifled - Artillery and cavalry, 2 drs., clay plug - Not in ditto - -	1	– – 1	– – 1
Ball, Coal-dust - Carbine, rifled - Sharp's B. L., 2½ drs. In waterproof bags	10	– – 10	– – 11
Ball, Coal-dust - Carbine, rifled - Sharp's B. L., 2½ drs. Not in ditto - -	1		
Ball, Coal-dust - Carbine, rifled - Terry's B. L., 2 drs. - In waterproof bags	20	– 1 1	– 1 2
Ball, Coal-dust - Carbine, rifled - Terry's B. L., 2 drs. - Not in ditto - -	1	– – 1	– – 1
Ball, Coal-dust - Carbine, rifled - W. Richards' B. L., 2 drs. - In waterproof bags	10	– – 7	– – 7
Ball, Coal-dust - Carbine, rifled - W. Richards' B. L., 2 drs. - Not in ditto - -	1	– – 1	– – 1
Ball, Coal-dust - Musket, rifled - 1853 and Lancaster, 2½ drs., clay plug - In waterproof bags	10	– – 5	– – 5
Ball, Coal-dust - Musket, rifled - 1853 and Lancaster, 2½ drs., clay plug - Not in ditto - -	1	– – 1	– – 1
Ball, Coal-dust - Musket, rifled - Whitworth, 75 grs. - In waterproof bags	10	– – 9	– – 9
Ball, Coal-dust - Musket, rifled - Whitworth, 75 grs. - Not in ditto - -	1		
Ball, Coal-dust - Pistol, smooth bore, 1 dr., not in waterproof bags -	3	– – 1	– – 1
Blank - - All arms, 3½ drs. - - - - - - - -	11	– – 1	– – 1
Blank - - Carbine and musket, W. Richards', 3 drs. - -	11	– – 3	– – 3
Blank - - Sharp's B. L. carbine, 3 drs. - - - - -	11	– – 3	– – 3
Blank - - Terry's B. L. carbine, 3 drs. - - - - -	11	– – 2	– – 2
Ball for Snider Rifle Dummy - - - - - - - -	4,000	11 19 7	12 16 1
Ball, Carbine - Rifled - Artillery and Cavalry, 2 drs., clay plug, in waterproof bags - - - - -	750	1 14 8	1 16 4
Ball, Carbine - Rifled - Breech-loading - Sharp's, 2¼ drs., in waterproof bags - - - -	215,500	938 19 11	1,003 11 –
Ball, Carbine - Rifled - Breech-loading - W. Richards', 2 drs., in waterproof bags - - - -	3,170	10 3 7	10 17 7
Ball, Carbine - Smooth bore, with buck shot, in waterproof bags -	2,000	4 19 –	5 5 10
Ball - - Musket, rifled - 1853 pattern and Lancaster, 2½ drs., clay plug, in waterproof bags - - -	2,800	6 17 9	7 7 2
Ball - - Musket, rifled - Westley Richards' breech-loading, 70 grs., in waterproof bags - - - -	1,170	3 15 8	4 – 10
Ball - - Musket proof, 1853, 5 drs., not in waterproof bags -	30,000	91 5 –	97 10 6
Ball - - Musket, B. L., Boxer - Proof, 5 drs. - - - - - - -	268,806	953 19 7	1,019 11 4
Ball - - Musket, B. L., Boxer - Service - Pattern II. - - - -	2,005,040	8,360 11 11	8,935 7 8
Ball - - Musket, B. L., Boxer - Service - " III. - - - -	10,457,360	43,605 – 3	46,602 17 2
Ball - - Musket, B. L., Boxer - Service - " IV. - - - -	10,723,060	42,501 5 11	45,423 5 2
Ball - - Musket, B. L., Boxer - Service - " V. - - - -	40,493,180	151,807 4 9	162,128 8 11

No. 3.—Royal Laboratory, Woolwich Arsenal—(D.) Statement of Stores, &c.—*continued.*

DESCRIPTION OF ARTICLES.	Number or Quantity.	Cost per Balance Sheet, No. 1.	Cost per Balance Sheet, No. 2.
Cartridges, Small Arm—*continued.*		£. s. d.	£. s. d.
Ball - Musket, B. L., Boxer - For Burton Rifle, and others, ·5 bore	7,570	32 12 9	34 17 7
Ball - Musket, B. L., Boxer - Brown paper cases, pattern IV.	2,000	7 10 1	8 – 5
Ball - Flint lock, 6 drs. musket, in waterproof bags	4,000	102 10 8	109 11 7
Ball - Boxer, B. L., for ·577-inch Snider rifles, buck shot, 2¼ drs., I.	7,800	30 15 8	32 17 11
Ball - Pistol, rifled, Adams', 13 grs., B. L. Boxer's	1,000	2 6 2	2 9 4
Ball - Pistol, smooth bore, pistol bore, 1 dr., in waterproof bags	1,000	1 15 9	1 18 2
Blank - Breech-loading carbine and musket, W. Richards', 3 drs.	8,050	14 10 10	15 10 9
Blank - Boxer, B. L. ·577 - Pattern I.	1,656,700	4,497 5 –	4,806 8 9
Blank - Boxer, B. L. ·577 - Pattern II.	13,880,475	28,339 6 –	30,287 12 6
Blank - Boxer, B. L. ·577 - Pattern III.	32,500	65 11 9	70 1 10
Cases:			
Brass, Rectangular, corrugated	3,499	9,627 8 4	10,289 6 –
Boxer Cartridge, for Snider rifles	200	– 13 4	– 14 3
Iron, for conveyance of Ammunition by rail - Half barrel	19	49 – 1	52 7 6
Iron, for conveyance of Ammunition by rail - Quarter	71	151 12 10	162 – 11
Tin - Bickford's fuze, boat magazine	6	1 3 9	1 5 4
Tin - Copper caps, boat magazine	6	2 12 1	2 15 3
Casks, Sand Shot	25	11 17 6	12 13 10
Collars, Leather, Shell - Large	12,000	4 8 3	4 14 4
Collars, Leather, Shell - Small R.	2,000	1 8 5	1 10 4
Composition Fuze, lbs.	10	– 5 –	– 5 4
Covers:			
Paper Cartridge - No. 6	4	– – 2	– – 2
Paper Cartridge - „ 8	18,620	37 15 3	40 7 1
Paper Cartridge - „ 9	62,500	132 17 7	142 – 3
Paper Cartridge - „ 10	16,000	38 16 –	41 9 4
Paper Cartridge - „ 12	13,909	31 2 3	33 5 –
Paper Cartridge - „ 13	6,000	14 3 11	15 3 4
Paper Cartridge - „ 14	2,000	4 14 4	5 – 9
Paper Cartridge - „ 16	1,000	3 1 10	3 6 –
Paper Cartridge - „ 17	1,000	4 – 7	4 6 1
Paper Cartridge - „ 19	1,000	4 9 7	4 15 9
Cups for B. L. Guns:			
Screw - Copper - 7-inch	300	9 14 8	10 8 –
Screw - Tin - 7-inch	19,000	296 4 11	316 12 3
Screw - Tin - 40-pounder	18,344	233 18 2	249 19 9
Screw - Tin - 20 „	8,000	74 6 8	79 8 10
Screw - Tin - 12 or 9-pounder	7,000	65 – 10	69 10 3
Screw - Tin - 6-pounder	1,700	9 17 3	10 10 9
Wedge Tin, 64-pounder	500	7 15 8	8 6 4
Cylinders:			
Iron Testing Gun, M. L. - 13-inch	4	11 3 8	11 19 –
Iron Testing Gun, M. L. - 12 „	10	23 11 8	25 4 1
Iron Testing Gun, M. L. - 9 „ Lancaster	2	1 17 6	2 1 5
Iron Testing Gun, M. L. - 9 „	80	74 5 1	79 7 2
Iron Testing Gun, M. L. - 8 „	62	45 8 7	48 11 –
Iron Testing Gun, M. L. - 7 „	430	211 10 9	226 1 7
Iron Testing Gun, M. L. - 12-pounder	6	1 7 8	1 9 6
Paper - For B. L. Cartridges. 7-inch, B. L., and 40-pounder, 11 lbs.	40,000	373 12 6	399 6 2
Paper - For B. L. Cartridges. 64-pounder, 8 lbs.	2,620	16 19 6	18 2 10
Paper - For B. L. Cartridges. 20 „	17,000	110 2 1	117 13 6
Paper - For M. L. Cartridges. 9-inch, 15 lbs.	50	– 17 –	– 18 2
Paper - For M. L. Cartridges. 8-inch, 12 lbs.	50	– 17 –	– 18 2
M. L. Cartridge, Zinc - 9-inch, to hold one - 43 lbs.	4,241	1,245 11 10	1,331 4 6
M. L. Cartridge, Zinc - 9-inch, to hold one - 30 lbs.	6,360	1,592 11 8	1,702 1 5
M. L. Cartridge, Zinc - 7-inch - One 22 lbs.	1,305	306 19 7	328 [illegible] 8
M. L. Cartridge, Zinc - 7-inch - Two 14 lbs.	1,873	491 19 5	525 15 10
M. L. Cartridge, Zinc - 80-pounder, two 14 lbs.	375	143 2 6	152 19 3

No. 3.—Royal Laboratory, Woolwich Arsenal—(D.) Statement of Stores, &c.—*continued.*

DESCRIPTION OF ARTICLES.	Number or Quantity.	Cost per Balance Sheet, No. 1.	Cost per Balance Sheet, No. 2.
Cylinders—*continued.*		£. s. d.	£. s. d.
Zinc — No. 3	1,700	23 8 11	25 1 1
Zinc — „ 9	3,000	28 13 9	30 13 2
Zinc — „ 7	50	– 19 9	1 1 1
Zinc — „ 13	400	10 2 –	10 15 10
Zinc — „ 8	412	11 9 5	12 5 2
Zinc — „ 11	4,000	45 14 2	48 17 –
Zinc — „ 15	150	1 4 8	1 6 4
Copper Cap, fuze, tube, &c. — „ 18	70	1 14 5	1 16 1
Copper Cap, fuze, tube, &c. — „ 19	1,055	26 17 2	28 14 –
Copper Cap, fuze, tube, &c. — „ 20	2,054	47 19 5	51 5 4
Copper Cap, fuze, tube, &c. — „ 21	2,050	52 12 4	56 4 8
Copper Cap, fuze, tube, &c. — „ 22	465	3 18 3	4 3 7
Diagrams:			
Lithographed, of Stores for mountain service	766	126 3 9	134 17 2
„ R. L.	11,013		
„ R. G. F.	1,200		
Discs, Iron, for Boxer cartridges	4,000,000	529 9 11	565 17 11
Forgings, Iron — cwts. qrs. lbs.	0 0 9	– 1 5	– 1 6
Funnels:			
Copper, Naval cartridge	200	36 17 6	39 8 2
Leather, Boat magazine	6	– 2 10	– 3 –
Fuzes:			
Abel's Electric, for mines, complete	1,556	27 15 8	29 13 9
Rocket, Life-saving — 6-pounder	15	– 19 3	1 – 7
Rocket, Life-saving — 3 „	15	– 19 3	1 – 7
Percussion, complete — Armstrong — Pattern — C. screwed	1	3,526 17 5	3,769 6 10
Percussion, complete — Armstrong — Pattern — Freeth's	78,211		
Percussion, complete — Armstrong — Pillar	3	– 4 3	– 4 6
Percussion, complete — Moorsom's	1	– 8 8	– 9 3
Percussion, complete — Pettman's, general service	126,841	8,115 3 8	8,673 2 6
Percussion, complete — „ — Land	37,477	2,099 17 8	2,244 4 11
Percussion, complete — „ — Sea	2	– 3 –	– 3 3
Time, Metal, empty — 20″	1	– 1 10	– 2 –
Time, Metal, empty — 7½″	1	– 1 10	– 2 –
Time, Metal, complete, Armstrong pattern, E. Freeth's	11,994	1,059 14 5	1,132 11 5
Rocket, Life-saving, 12-pounder	490	31 12 11	33 16 5
Time, Wood, complete — Boxer — Rifled Ordnance — B. L. — 20 seconds	41,077	1,474 3 10	1,575 10 10
Time, Wood, complete — Boxer — Rifled Ordnance — B. L. — 9 „	16,009	581 14 11	621 14 9
Time, Wood, complete — Boxer — Rifled Ordnance — M. L. — 20 „	50,007	1,292 19 11	1,381 17 9
Time, Wood, complete — Boxer — Rifled Ordnance — M. L. — 9 „	28,391	726 2 7	776 1 –
Time, Wood, complete — Boxer — 7-pounder gun — M. L. — 15 „	1,231	31 1 11	33 4 8
Time, Wood, complete — Boxer — 7-pounder gun — M. L. — 10 „	11,640	292 6 5	312 8 4
Time, Wood, complete — Boxer — 7-pounder gun — M. L. — 5 „	8,166	205 1 6	219 3 5
Time, Wood, complete — Parachute — 10-inch	16	– 7 10	– 8 4
Time, Wood, complete — Parachute — 8 „	35	– 17 2	– 18 4
Time, Wood, complete — Parachute — 5½ „	2	– 1 –	– 1 1
Time, Wood, complete — Common	2	– – 7	– – 7
Time, Wood, complete — Diaphragm Shrapnel	2	– – 6	– – 6
Time, Wood, complete — Hand Grenade	2	– – 5	– – 5
Time, Wood, complete — Manby's Shot	6	– 3 2	– 3 4
Time, Wood, complete — Mortar service — Large	2	– 1 –	– 1 1
Time, Wood, complete — Mortar service — Small	2	– – 7	– – 7
Time, Wood, complete — Empty, Mortar service, Large	500	3 15 6	4 – 8

No. 3.—Royal Laboratory, Woolwich Arsenal—(D). Statement of Stores, &c.—*continued.*

DESCRIPTION OF ARTICLES.	Number or Quantity.	Cost per Balance Sheet, No. 1.	Cost per Balance Sheet, No. 2.
		£. s. d.	£. s. d.
Gauges, Filled Cartridges:			
Brass Ring - B. L. - 7-inch B. L. 7·026	1	– 6 9	– 7 2
Brass Ring - B. L. - 40-pounder 4·836	1	– 10 6	– 11 2
Brass Ring - B. L. - 40-pounder 4·773	1		
Brass Ring - Smooth bore 10-inch, 9·76	1	– 10 11	– 11 8
Brass Ring - Smooth bore 68-pounder, 7·76	4	1 5 3	1 6 11
Brass Ring - Smooth bore 32 „ 6·087	4	1 3 –	1 4 6
Brass Ring - Smooth bore 24 „ 5·52	3	– 16 –	– 17 1
Brass Ring - Smooth bore 18 „ 5·024	3	– 15 –	– 16 –
Brass Ring - Smooth bore 12 „ 4·388	3	– 11 3	– 12 –
Brass Ring - Smooth bore 9 „ 4·02	2	– 7 –	– 7 6
Brass Ring - Smooth bore 6 „ 3.496	2	– 6 2	– 6 7
Brass Ring - Smooth bore 3 „ 2·778	2	– 5 11	– 6 4
B. L., Wood, lengths - 7-inch, B. L., 11 lbs.	1	– 10 4	– 11 –
B. L., Wood, lengths - 64-pounder, B. L.	2	– 19 1	1 – 4
B. L., Wood, lengths - 40 „ L. S.	1	– 16 5	– 17 6
B. L., Wood, lengths - 40 „ S. S., and 20 pr.	1		
Brass Ring M. L., 8-inch - 7·3	1	– 18 1	– 19 3
Brass Ring M. L., 8-inch - 6·26	1		
Brass Ring, M. L. - 13-inch, 11·25 inch.	2	1 3 9	1 5 4
Brass Ring, M. L. - 9-inch - 43 and 30 lbs. 8·2-inch	49	48 5 4	51 11 8
Brass Ring, M. L. - 9-inch - 15 lbs. 6·8-in.	49		
Brass Ring, M. L. - 7 „ 6·4 inch.	24	10 1 8	10 15 6
Cylinder, M. L. - 9-inch - 9·325	26	134 6 2	143 10 10
Cylinder, M. L. - 9-inch - 8·955			
Cylinder, M. L. - 8 „ 8·325	6	26 15 2	28 11 11
Cylinder, M. L. - 8 „ 7·955			
Cylinder, M. L. - 7 „ 7·325	29	102 16 –	109 17 4
Cylinder, M. L. - 7 „ 6·955			
Cylinder, M. L. - 64-pounder 6·485	39	91 17 1	98 3 4
Cylinder, M. L. - 64-pounder 6·255			
Iron Ring shot or shell - 7-inch, B. L., 7·08	10	3 11 5	3 16 4
Iron Ring shot or shell - 40-pounder, 4·83	10	2 6 4	2 9 6
Iron Ring shot or shell - 64 „ B. L., 6·482	6	1 16 3	1 18 9
Iron Ring shot or shell - Armstrong - 20-pounder 3·836	10	1 7 6	1 9 4
Iron Ring shot or shell - Armstrong - 12 or 9 pounder 3·074	1	3 18 2	4 3 5
Iron Ring shot or shell - Armstrong - 12 or 9 pounder 3·1	3		
Iron Ring shot or shell - Armstrong - 12 or 9 pounder 3·067	14		
Iron Ring shot or shell - Armstrong - 12 or 9 pounder 3·034	1		
Iron Ring shot or shell - Armstrong - 12 or 9 pounder 2·95	1		
Iron Ring shot or shell - Armstrong - 12 or 9 pounder 3·024	1		
Iron Ring shot or shell - Armstrong - 12 or 9 pounder 2·97	1		
Iron Ring shot or shell - Armstrong - 12 or 9 pounder 3·015	1		
Iron Ring shot or shell - Armstrong - 6-pounder - 2·567	5	– 11 4	– 12 1

No. 3.—Royal Laboratory, Woolwich Arsenal—(D.), Statement of Stores, &c.—*continued.*

DESCRIPTION OF ARTICLES.			Number or Quantity.	Cost per Balance Sheet, No. 1.	Cost per Balance Sheet, No. 2.
Gauges—*continued.*				£. s. d.	£. s. d.
Iron ring shot or shell, M. L.	7-inch	7·325	36	66 – 10	70 11 7
		7·305	34		
		6·955	65		
		6·91	1		
	8-inch	8·305	6	3 13 –	3 18 –
	7-pounder	3·19	2	– 17 4	– 18 6
		2·965	2		
	9-inch	9·305	6	57 3 9	61 2 4
		9·325	30		
		8·955	30		
	8-inch	8·325	21	33 8 2	35 14 1
		7·955	21		
	64-pounder	6·485	14	18 7 1	19 12 4
		6·465	16		
		6·255	14		
Iron ring shot or shell, spherical	13-inch	12·88	6	12 15 4	13 12 10
		12·8	6		
	100-pounder	8·92	11	6 19 2	7 8 9
		8·88	4		
	32-pounder	6·207	1	– 13 –	– 13 10
		6·147	1		
	24-pounder	5·639	1	– 13 8	– 14 7
		5·57	1		
Goloshes, Leather, Service, Pairs			266	124 10 5	133 1 7
Handles:					
Life-saving, Boxer pattern 1865			47	20 17 11	22 6 7
Long or signal, for lights			848	20 1 4	21 8 11
Handles, portfire, life-saving, Boxer pattern 1865			45	12 16 5	13 14 –
Holders:					
Shell, Palliser, M. L.	9-inch		1	2 16 3	3 – 1
	8-inch		1	2 14 2	2 17 10
	7-inch		1	2 12 1	2 15 7
Hooks, Shell, Lewis hand			20	6 5 11	6 14 6
Hoops, Copper, for Powder Barrels:					
Whole, unmade	Bilge		34,000	2,844 4 2	3,039 14 11
	Chime		33,952	2,658 14 6	2,841 10 2
Implements, Parts of:					
Bags, Canvas	Cylinders, wood	Common	1,576	16 13 10	17 16 8
		Mortar	22	– 4 8	– 4 11
		Naval	2	– – 4	– – 4
	Hook borer		1,076	11 16 3	12 12 5
Bits	Long naval		2	– – 5	– – 5
	Hook borer		10,330	120 9 11	128 15 6
	Mortar		92	1 15 2	1 17 6
	Rivet hole in wood bottoms		4	– – 10	– – 10
Blocks, Wood	13-inch		40	1 4 –	1 5 7
	10-inch		69	2 7 3	2 10 6
	8-inch		69	2 7 3	2 10 6
	32-pounder		27	– 18 6	– 19 9
	No. 2 set, siege		12	– 7 10	– 8 4
Braces	Mortar		3	– 9 –	– 9 7
	Naval		4	– 12 7	– 13 5

No. 3.—Royal Laboratory, Woolwich Arsenal—(D.) Statement of Stores, &c.—*continued.*

DESCRIPTION OF STORES.	Number or Quantity.	Cost per Balance Sheet, No. 1.	Cost per Balance Sheet, No. 2.
Implements, Parts of—*continued.*		£. s. d.	£. s. d.
Cylinders, Wood - Common	976	16 4 4	17 6 7
Cylinders, Wood - Mortar	12	– 12 3	– 13 1
Cylinders, Wood - Naval	3	– 3 1	– 3 3
Drifts, Wood - Common	86	– 11 6	– 12 3
Drifts, Wood - Diaphragm Shrapnel. Large	57	– 7 4	– 7 10
Drifts, Wood - Diaphragm Shrapnel. Small	71	– 9 1	– 9 8
Drivers, Screw, Diaphragm Shrapnel - Large	88	5 15 –	6 2 10
Drivers, Screw, Diaphragm Shrapnel - Small	77	4 17 7	5 4 3
Extractors, Fuze - Large	40	31 17 3	34 1 –
Extractors, Fuze - Small	497	308 19 1	330 3 8
Formers, Wood - Blank	25	– 5 4	– 5 8
Funnels - Leather, with Copper Spout. Common - Large	88	11 15 3	12 11 4
Funnels - Leather, with Copper Spout. Common - Small	14	1 10 2	1 12 2
Funnels - Leather, with Copper Spout. Diaphragm Shrapnel. Large	56	5 5 9	5 13 –
Funnels - Leather, with Copper Spout. Diaphragm Shrapnel. Small	71	5 18 5	6 6 6
Gauge, Fuze Hole - Common	35	6 9 9	6 18 7
Gauge, Fuze Hole - Mortar	42	10 18 2	11 13 1
Hammers, Riveting, Naval and Siege	24	3 11 1	3 15 11
Hooks, Hook-borer	1,726	154 4 10	164 16 11
Holders, Shell	61	157 17 5	168 14 5
Handles, Hook-borer	1,726	225 10 3	241 – 3
Instructions - Field - No. 1	184	6 4 6	6 13 1
Instructions - Field - „ 2	26		
Instructions - Field - „ 3	150		
Instructions - Field - „ 4	218		
Instructions - Naval Fuze and Shell	461		
Instructions - Rifle Guns of Position	9		
Instructions - Special 7-pounder M. L. Guns	54		
Instructions - Siege - No. 1	154		
Instructions - Siege - „ 2	313		
Instructions - Siege - „ 3	377		
Instructions - Siege - „ 4	747		
Instructions - Siege - „ 5	155		
Instructions - Siege - „ 6	141		
Keys, Iron - Adapter and Plug	3	– 11 10	– 12 7
Keys, Iron - Common Plug	34	1 – 7	1 2 –
Keys, Iron - Fuze and Plug, General Service	357	108 7 11	115 16 11
Keys, Iron - Pettman's L. S. Fuze	63	1 8 5	1 10 4
Keys, Iron - Shell and Fuze, Armstrong	351	73 7 1	78 7 11
Keys, Iron - Square	31	2 3 4	2 6 4
Levers - Common, No. 1 Set	27	4 7 9	4 13 9
Levers - Mortar and Naval	144	21 16 6	23 6 6
Mallets - Common and Diaphragm Shrapnel	337	28 17 1	30 16 9
Mallets - Mortar	4	– 6 10	– 7 3

No. 3.—Royal Laboratory, Woolwich Arsenal—(D.) Statement of Stores, &c.—*continued.*

DESCRIPTION OF ARTICLES.	Number or Quantity.	Cost per Balance Sheet, No. 1.	Cost per Balance Sheet, No. 2.
		£. s. d.	£. s. d.
Implements, Parts of—*continued.*			
Patterns, Tin, Sets { 2½ drs.	1	– 1 8	– 1 9
Patterns, Tin, Sets { 3½ „	1		
Prickers, removing Wax	19	– 10 4	– 11 –
Punches, Iron, Riveting Bottoms	56	3 7 11	4 3 –
Rectifiers or Rimers { Common Fuze Hole	56	10 11 11	11 5 5
Rectifiers or Rimers { Common Rivet Hole	9	– 6 4	– 6 9
Rectifiers or Rimers { Mortar Fuze Hole	40	12 13 3	13 10 7
Rectifiers or Rimers { Naval Rivet Hole	4	– 2 5	– 2 7
Setters, Common and Diaphragm Shrapnel	110	1 9 8	1 11 8
Shields, Wood, for Bits	4	– – 3	– – 3
Spanners, or Wrench Box	9	– 7 5	– 7 11
Spanners, Uncapping, 7½ & 20-second Fuzes	22	3 5 3	3 9 8
Stops, Brass, for Bits, Naval	3	– – 8	– – 8
Taps, Screw { Naval	104	34 3 2	36 10 1
Taps, Screw { Pettman's, Common	89	29 4 7	31 4 9
Wires, Guide	4	– – 6	– – 6
Wrenches, Naval, Fixing Fuze	106	46 15 5	49 19 8
Wrenches, Naval, Removing Plug	4	– 7 1	– 7 7
Small Arm Cartridges { Carbine Smooth Bore, C.B. { Slides, Tin	1	– – 1	– – 1
Small Arm Cartridges { Carbine Smooth Bore, C.B. { Formers, Wood	1	– – 3	– – 3
Small Arm Cartridges { Carbine Smooth Bore, C.B. { Patterns, Tin, 4 to a set, Sets	1	– – 10	– – 11
Small Arm Cartridges { Paget's Carbine { Formers Wood	1	– – 3	– – 3
Small Arm Cartridges { Paget's Carbine { Gauges, Steel Bullet	1	– 3 11	– 4 2
Small Arm Cartridges { Paget's Carbine { Patterns, Tin, 7 to a set, Sets	1	– – 10	– – 11
Small Arm Cartridges { Paget's Carbine { Plugs, Wood, forming	1	– – 2	– – 2
Small Arm Cartridges { Paget's Carbine { Slides, Tin	1	– – 1	– – 1
Small Arm Cartridges { Terry's B.L. Carbine { Drifts, Metal	2	– 3 10	– 4 1
Small Arm Cartridges { Terry's B.L. Carbine { Formers { Metal	1	– 1 5	– 1 6
Small Arm Cartridges { Terry's B.L. Carbine { Formers { Wood	2	– – 5	– – 5
Small Arm Cartridges { Terry's B.L. Carbine { Gauges { Metal Cartridge	1	– 11 3	– 12 –
Small Arm Cartridges { Terry's B.L. Carbine { Gauges { Steel Bullet	1	– 3 11	– 4 2
Small Arm Cartridges { Terry's B.L. Carbine { Moulds, Metal	2	3 19 5	4 4 10
Small Arm Cartridges { Terry's B.L. Carbine { Patterns, Tin, 4 to a set, Sets	1	– – 10	– – 11
Small Arm Cartridges { Terry's B.L. Carbine { Punches, Circular	2	– 9 4	– 9 11
Small Arm Cartridges { Terry's B.L. Carbine { Slides, Tin	1	– – 1	– – 1
53 Slides, Tin	2	– – 2	– – 2
Instructions for filling Palliser Shell	5	– – 3	– – 3
Iron, Specimens of Cast, in Chill and Sand — cwt. qrs. lbs.	0 2 7 6/16	– 3 8	– 3 11
Instruments, extracting M. L. Projectiles { 9 inch	67	335 11 2	358 12 7
Instruments, extracting M. L. Projectiles { 8 „	44	211 2 2	225 12 5
Instruments, extracting M. L. Projectiles { 7 „	195	908 11 7	971 – 10
Instruments, extracting M. L. Projectiles { 64-pounder	131	595 4 8	636 3 1
Kegs for Paint { Whole, or No. 5	1	– 4 7	– 4 10
Kegs for Paint { Quarter, or No. 3	36	3 4 3	3 8 8
Kegs for Paint { Eighth „ 2	1	– 1 4	– 1 5
Keys, Metal, for Cases, Rectangular	200	17 18 7	19 3 2

No. 3.—Royal Laboratory, Woolwich Arsenal—(D.) Statement of Stores, &c.—*continued.*

DESCRIPTION OF ARTICLES.	Number or Quantity.	Cost per Balance Sheet, No. 1.	Cost per Balance Sheet, No. 2.
		£. s. d.	£. s. d.
Lanyards Friction Tubes:			
Field	56	– 17 8	– 18 10
Garrison	418	7 6 10	7 16 11
Naval, Short	6,096	146 12 5	156 14 –
Leaders, QuickMatch lbs.	3	– 5 6	– 5 10
Levers:			
Cases, Pentagon	150	16 – 4	17 2 4
Life Buoy Appurtenances:			
Caps, Brass — Bottom	12	3 16 2	4 1 4
Caps, Brass — Top	12	4 2 11	4 8 7
Rods, Balance	10	6 16 8	7 6 –
Sockets, Brass	18	3 2 8	3 7 –
Lights:			
Long — Boxer, Pattern 1865, for Life-saving Apparatus	264	21 2 11	22 11 11
Long — Whole	2,729	145 17 2	155 17 8
Signal, Whole	24	– 11 7	– 12 4
Signal, as proposed by Superintendent R. L., for Coast Guard, Whole	9	– 4 4	– 4 7
Lubricators, Cartridge, B. L.:			
Drill, Dummy, 7-inch	54	9 6 8	9 19 6
Service — Copper — 40-pounder, S. S.	4,288	167 11 7	179 2 –
Service — Copper — 20-pounder	4,000	99 18 2	106 15 6
Service — Copper — 12 or 9-pounder	31,686	593 – 6	633 15 10
Service — Copper — 6 pounder	1,400	21 2 7	22 11 7
Service — Tinned Iron — 7-inch	9,198	549 5 4	587 – 6
Service — Tinned Iron — 40-pounder, L. S.	3,000	100 2 7	107 – 3
Service — Tinned Iron — 40-pounder, S. S.	105	2 13 4	3 18 4
Service — Tinned Iron — 20-pounder	6,075	137 12 8	147 1 11
Service — Tinned Iron — 12 or 9-pounder	35,520	611 – 4	653 – 5
Service — Tinned Iron — 6-pounder	2,000	28 16 6	30 16 1
Service — Zinc — 7-inch	450	25 18 3	27 13 10
Service — Zinc — 40-pounder, S. S.	150	4 19 3	5 6 1
Luting, Common lbs.	100	4 12 7	4 18 11
Machines:			
Filling Cartridges, Caffin's S. A.	10	2 5 6	2 8 7
Or Tubes, Rocket — Signal	3	6 3 3	6 11 8
Or Tubes, Rocket — Life-saving, Boxer	21	152 3 3	162 12 5
Or Tubes, Rocket — War, Hale — L. S. 6-pounder, Mountain Service	17	220 10 1	235 13 3
Or Tubes, Rocket — War, Hale — S. S. 24-pounder	231	1,884 16 4	2,014 7 11
Filling Cartridges, Caffin's, Cannon, Small	2	48 16 4	52 3 5
Rockets, Life-saving, Boat Service	1	7 4 11	7 14 10
Mallets, Box, × Head	5	– 4 2	– 4 5
Mandrils:			
Wood for — Bottoms	194	10 15 8	11 10 5
Wood for — Tops	25		
Match, Quick lbs.	233	21 9 3	22 18 9
Measures, Metal:			
Caffin's Machines — 6 lbs.	4	2 18 8	3 2 8
Caffin's Machines — 5 „	4	2 11 10	2 15 4
Caffin's Machines — 4 „	4	2 10 10	2 14 3
Caffin's Machines — 3 „ 8 ozs.	2	1 3 3	1 4 10
Caffin's Machines — 3 „	4	2 4 –	2 7 –
Caffin's Machines — 2 „ 10 ozs.	2	1 1 7	1 3 1
Caffin's Machines — 2 „ 8 „	4	2 2 11	2 5 10
Caffin's Machines — 2 „	2	1 – 3	1 1 7

No. 3.—Royal Laboratory, Woolwich Arsenal—(D.) Statement of Stores, &c.—*continued.*

DESCRIPTION OF STORES.	Number or Quantity.	Cost per Balance Sheet, No. 1.	Cost per Balance Sheet, No. 2.
Measures, Metal—*continued.*		£. s. d.	£. s. d.
Caffin's Machines, Small Arm - - - 5 drs. - - - - - - - -	18	4 3 2	4 8 10
4½ „ - - - - - - - -	18	4 3 7	4 9 3
4 „ - - - - - - - -	20	4 13 6	4 19 10
3½ „ - - - - - - - -	40	9 6 11	9 19 9
3 „ - - - - - - - -	20	4 12 6	4 18 8
2½ „ - - - - - - - -	20	4 12 7	4 18 9
2¼ „ - - - - - - - -	20	4 13 –	4 19 4
2 „ - - - - - - - -	20	4 13 5	4 19 9
1¾ „ - - - - - - - -	20	4 13 5	4 19 9
1 „ - - - - - - - -	18	4 5 1	4 10 11
Copper, Powder - 20 lbs. - - - - - - - -	34	32 3 3	34 7 5
12 „ - - - - - - - -	21	15 13 4	16 15 –
10 „ - - - - - - - -	35	23 7 8	24 19 9
8 „ - - - - - - - -	54	31 3 2	33 6 –
7 „ - - - - - - - -	1	– 10 4	– 11 –
6 „ - - - - - - - -	1	– 9 3	– 9 11
5 „ - - - - - - - -	1	– 7 11	– 8 5
4 „ - - - - - - - -	8	2 15 3	2 19 –
3 „ - - - - - - - -	58	16 5 4	17 7 8
2½ „ - - - - - - - -	1	– 5 4	– 5 8
1 „ - - - - - - - -	12	1 – 11	1 2 4
¼ „ - - - - - - - -	8	– 13 6	– 14 5
For Diaphragm Shrapnel Bursters - - - 80 drs. - -	3	– 11 5	– 12 2
70 „ - -	1	– 3 10	– 4 1
60 „ - -	3	– 10 1	– 10 9
50 „ - -	3	– 9 11	– 10 7
40 „ - -	3	– 9 2	– 9 9
30 „ - -	3	– 7 10	– 8 5
24 „ - -	1	– 2 6	– 2 8
18 „ - -	1	– 2 5	– 2 7
Pliers, Spring, for Primers, Boxer Shrapnel Shell - - - - -	16	– 12 11	– 13 9
Plugs:			
Clay Lead Ball - - - - - - - - - -	1,380,000	42 16 9	45 15 7
Metal Fuze Hole, Ball Parachute - 10 inch - - - -	15	– 5 3	– 5 7
8 „ - - - -	21	– 5 11	– 6 4
5½ „ - - - -	1	– – 4	– – 4
Metal Shell Fuze Holes - Common - - - - - -	10,358	74 2 9	79 4 8
Diaphragm Shrapnel - - - -	8,150	69 – 6	73 15 5
General Service - - - - -	222,942	1,509 12 10	1,613 8 7
Metal Fuze Hole with String Loops, Small - - - - -	37,099	365 3 10	390 5 11
Portfires:			
Boxer, Pattern 1865, for Life-saving Apparatus - - - -	281	4 19 –	5 5 10
Coast Guard, Whole - - - - - - - - -	1,800	94 7 9	100 17 6
Press, Hand, for Stamping Figures on Fuzes - - - - - -	1	10 15 4	11 10 1
Primers:			
For Shrapnel Shells, Brass, Filled - - - - - - -	3,953	56 3 4	60 – 6
Vent-piece - - - - - - - - - - -	100	– 10 –	– 10 8
Pattern 1865, for Life-saving Apparatus Lights, Long - - -	346	2 17 3	3 – 4
Portfire - - - -	328	2 16 11	3 – 9
Rivets, Metal:			
For Copper Hoops, Whole Barrel - - - - cwt. qrs. lbs.	2 0 11	17 12 6	18 16 8
Shell, Naval, Large - - - - - - - - -	3,032	6 15 2	7 4 5

No. 3.—Royal Laboratory, Woolwich Arsenal—(D.) Statement of Stores, &c.—*continued.*

DESCRIPTION OF STORES.	Number or Quantity.	Cost per Balance Sheet, No. 1.	Cost per Balance Sheet, No. 2.
		£. s. d.	£. s. d.
Rockets:			
Life-saving: Boxer, empty, 12-pounder	4	1 18 3	2 – 10
Life-saving: 12-pounder, Boxer, whole	412	382 15 10	409 2 1
Life-saving: Boxer: 6-pounder, Whole	12	7 9 8	7 19 11
Life-saving: Boxer: 3 " "	12	5 15 9	6 3 8
Signal: 1 lb.: Whole	3,975	502 11 9	537 2 9
Signal: 1 lb.: Coloured, including Sticks, &c. &c.	400	244 3 9	260 19 6
Signal: ½ lb. Whole	800	70 10 10	75 7 9
Signal: ¼ lb. "	500	35 16 5	38 6 1
War, Hale: 24-pounder, Whole	1,959	1,790 9 4	1,913 11 2
War, Hale: 12 " "	1,796	1,156 9 6	1,235 19 8
War, Hale: 6 or 9-pounder, Whole	3,705	1,898 2 4	2,028 12 2
War, Hale: 3-pounder, Whole	1,588	531 12 4	568 2 10
Rods, Iron, for Bottoms	125	2 16 6	3 – 4
Shells:			
Empty, Common, B. L.: 7-inch	13,951	5,705 5 10	6,097 10 7
Empty, Common, B. L.: 12-pounder, Whole	24,000	3,013 1 11	3,220 4 10
Empty, Common, B. L.: 9 " "	13,101	1,460 11 9	1,560 19 11
Common, Empty, M. L.: 13-inch, Whole	80	327 12 8	350 3 2
Common, Empty, M. L.: 12 " "	240	904 9 11	966 13 7
Common, Empty, M. L.: 9 " "	9,880	12,720 5 4	13,594 15 8
Common, Empty, M. L.: 8 " "	4,578	4,237 2 7	4,528 9 11
Common, Empty, M. L.: 7 " "	8,513	5,480 1 4	5,856 16 5
Common, Empty, M. L.: 7 " Double, Whole	5,021	5,208 14 9	5,566 16 9
Common, Empty, M. L.: 64-pounder, 16 inches, Whole	50,956	19,102 2 9	20,415 8 2
Common, Empty, M. L.: 7-pounder, Whole	3,935	574 6 11	613 16 7
Common, Empty, M. L.: 7-pounder, Double, Whole	1,025	266 3 7	284 9 6
Diaphragm, Shrapnel: Empty, Loose: 8-inch, or 68-pounder	1,000	446 9 2	477 3 –
Diaphragm, Shrapnel: Empty, Loose: 56-pounder	1,000	453 4 4	484 7 7
Diaphragm, Shrapnel: Empty, Loose: 18 "	1,000	192 3 4	205 7 6
Diaphragm, Shrapnel: Empty, Loose: 9 "	3,000	318 11 3	340 9 3
Diaphragm, Shrapnel: Empty, Loose: 6 "	2,000	177 10 –	189 14 1
Diaphragm, Shrapnel: Riveted, Empty, Elm, Gun or Howitzer: 150-pounder	150	137 15 11	147 5 4
Mortar, Empty, 8-inch, Whole	2,000	189 10 11	202 11 6
Naval, Riveted Top, Empty, Elm, 32-pounder, Whole	400	65 12 10	70 3 –
Palliser, Empty, M. L.: 13-inch	120	486 19 9	520 9 4
Palliser, Empty, M. L.: 12 "	140	522 15 6	558 14 3
Palliser, Empty, M. L.: 9 "	6,266	11,143 5 4	11,909 8 1
Palliser, Empty, M. L.: 8 "	4,551	6,349 14 9	6,786 5 7
Palliser, Empty, M. L.: 7 "	12,872	11,971 19 8	12,795 1 2

No. 3.—Royal Laboratory, Woolwich Arsenal—(D.) Statement of Stores, &c.—*continued.*

DESCRIPTION OF STORES.	Number or Quantity.	Cost per Balance Sheet, No. 1.	Cost per Balance Sheet, No. 2.
		£. s. d.	£. s. d.
Shells—*continued.*			
Shrapnel, Boxer, Empty, M. L. - 9-inch	943	2,061 9 5	2,203 3 11
8 „	530	863 13 4	923 – 10
7 „	616	675 9 –	721 18 1
7-pounder, Whole	5,376	1,119 2 –	1,196 – 9
64-pounder	1	– 15 7	– 16 7
Shrapnel, Boxer, Empty, 64-pounder, B. L., Whole	2,101	1,649 18 10	1,763 7 5
Common, 7-pounder, M. L., weighted to 7 lbs. 5 oz.	22	3 4 3	3 8 8
Weighted with sand, Common, 12-pounder, M. L.	2	– 6 1	– 6 6
Shoes, Magazine, Service, Pairs:			
No. 5	4	37 2 –	39 13 –
„ 6	119		
„ 7	323	608 13 8	650 9 9
„ 8	498		
„ 9	488		
„ 10	165		
„ 11	141		
W. A. Pattern, Pairs — No. 7	35	56 17 6	60 15 8
„ 8	40		
„ 9	30		
„ 10	10		
„ 11	5		
Shot:			
B. L. — Drill — 12-pounder	98	7 11 11	8 2 4
9 „	30	1 19 3	2 1 11
6 „	25	1 6 7	1 8 5
Service — 40 „	14,700	2,645 4 8	2,827 1 9
20 „	200	21 16 1	23 5 11
12 „	4,200	325 15 3	348 3 1
Case, Gun — Iron Ends — 10-inch and howitzer	1	– 7 10	– 8 4
8 „ or 68-pounder and howitzer	1	– 5 7	– 5 11
32-pounder	1	– 4 4	– 4 7
24 „	101	12 19 10	13 17 8
18 „	100	8 18 –	9 8 10
B. L. — or M. L. 7-inch	1,907	1,316 7 8	1,406 17 8
64-pounder	1	– 11 –	– 11 9
40 „	146	62 12 7	66 19 –
20 „	3,602	900 7 10	962 5 10
12 or 9-pounder	17,091	3,147 4 6	3,363 11 10
12-pounder	2,968	261 11 1	279 10 6
M. L. — 9-inch	710	740 2 2	790 19 9
8 „	94	77 6 8	82 13 –
64-pounder	14	7 7 –	7 17 1
7 „	2,406	231 13 7	247 12 1
Case, Howitzer — L. S. Elm Bottoms, 12-pounder	240	14 5 5	15 5 –
S. S. Elm, 12-pounder	240	12 6 11	13 3 11

No. 3.—Royal Laboratory, Woolwich Arsenal—(D.) Statement of Stores, &c.—*continued.*

DESCRIPTION OF STORES.	Number or Quantity.	Cost per Balance Sheet, No. 1.	Cost per Balance Sheet, No. 2.
		£. s. d.	£. s. d.
Shot—*continued.*			
Ball, Lead — Boxer, for Snider rifle, prepared	0 2 23 12/16 cwt. qrs. lbs.	1 – 8	1 2 1
Ball, Lead — 53 Proof, with paper attached	206 1 8 2/16	295 3 10	315 9 8
Ball, Lead — 53 Service	1,164 0 19 3/16	1,184 12 2	1,266 1 –
Ball, Lead — Pistol, S. B. ·632 inch	0 0 10 8/16	– 2 2	– 2 4
Ball, Lead — Revolver Rifle, Pistol — Colt's	17 0 0	25 14 2	27 9 6
Ball, Lead — Revolver Rifle, Pistol — Dean's	133 1 11 5/16	172 17 2	184 14 10
Ball, Lead — Paget's Carbine	5 1 27	5 14 5	6 2 3
Manby's — Cylindrical, 24-pounder, whole, with thongs	57	33 9 1	35 15 1
Manby's — Spherical, 6-pounder, with thongs	26	6 4 11	6 13 5
Ball, Lead, Carbine — C. B.	2 1 0 8/16 cwt. qrs. lbs.	2 10 11	2 14 5
Ball, Lead, Carbine — Terry's	138 1 20	141 8 4	151 2 9
Solid — Loose — 32-pounder	1	– 1 10	– 2 –
Solid — Loose — 3-pounder	6,000	82 7 6	88 – 9
Solid — Loose, prepared for bottoms, 3-pounder	1,300	19 – 6	20 6 7
Solid, M. L. — 11 inch	2	3 15 8	4 – 9
Solid, M. L. — 10 „	16	22 13 2	24 4 3
Palliser, M. L. — 9 „	2,640	3,604 15 1	3,852 11 7
Palliser, M. L. — 8 „	2,907	3,105 3 5	3,318 13 –
Palliser, M. L. — 7 „	14,965	10,154 5 5	10,852 7 6
Solid, Chilled — 150-pounder	120	131 2 6	140 2 9
Solid, Chilled — 100 „	160	131 2 11	140 3 2
Solid, Chilled — 68 „	500	315 19 8	337 14 1
Wood, Drill, M. L. — 9-inch	2	8 1 11	8 13 1
Wood, Drill, M. L. — 8 „	2		
Wood, Drill, M. L. — 7 „	3		
Sockets:			
Paper, for B. L. Cartridges	20,000	102 14 8	109 15 10
Spanners:			
Cases for Ammunition	90	4 3 10	4 9 7
Spouting, for shell lengths, including trestles	40	149 9 4	159 14 9
Stands:			
Wood, for shell and shot	100	– 12 6	– 13 4
Staves, Special Constables'	3,812	141 – 4	150 14 2
Sticks, Rocket, Life saving:			
Boxer — 12-pounder	411	12 6 7	13 3 6
Boxer — 6 „	12	– 6 10	– 7 3
Boxer — 3 „	12	– 4 10	– 5 2
Sticks, Rocket, Signal:			
1 lb.	4,924	137 10 3	146 19 4
1 lb. ropetail	440	7 6 11	7 17 –
½ lb.	1,200	25 – –	26 14 4

No. 3.—Royal Laboratory, Woolwich Arsenal—(D.) Statement of Stores, &c.—*continued.*

DESCRIPTION OF STORES.	Number or Quantity.	Cost per Balance Sheet, No. 1.	Cost per Balance Sheet, No. 2.
		£. s. d.	£. s. d.
Taps Screw, General Service, Fuze Hole	1	– 5 5	– 5 9
Thumbstalls, Leather	750	39 1 9	41 15 5
Tommies, Steel	2	– 3 –	– 3 2
Tops, Wood, Naval, Shell, 150-pounder, Elm	300	15 3 2	16 4 –
Tubes:			
Electric, Abel	4,006	57 10 4	61 9 5
Dummy, Drill	322	60 3 7	64 6 4
Friction: Copper, Service	571,400	2,243 18 9	2,398 4 1
Friction: 7-pounder M. L. Gun	14,451	46 13 4	49 17 6
Friction: Quill	655,908	4,133 11 9	4,417 15 5
Friction: Quill, Signal	600	2 3 5	2 6 5
Rocket, Life-saving	692	3 11 8	3 16 7
Friction: Copper, for 6-pounder Hale Rockets, Mountain Service	2,681	14 3 9	15 3 3
Friction: Quill, long	100	– 15 3	– 16 3
Tubs, Washing	2,000	84 17 11	90 14 7
Types for Marking Cartridges:			
Gun	44	61 – 10	65 4 9
Howitzer	2		
Small Arm	2		
Type Metal, with Handle	1		
Wads:			
Coal Dust, 8-inch, Empty	18,100	353 8 1	377 14 –
Papier Mâché: For Fuze Hole of Rifled Shell	25,001	8 18 8	9 10 11
Papier Mâché: Diaphragm: 24-pounder and upwards	15,000	2 – 6	2 3 3
Papier Mâché: Diaphragm: 18 „ and downwards	10,700	1 6 7	1 8 5
Papier Mâché: M. L.: 9-inch	55	1 16 5	1 19 1
Papier Mâché: M. L.: 8 „	50	1 13 8	1 15 11
Papier Mâché: M. L.: 7 „	1,050	36 3 8	38 13 5
Specimens and Sections	- -	399 17 8	427 6 8
Total £.		495,113 11 5	529,035 19 5

Examined,
James C. Hurst,
Accountant, and Auditor to the Manufacturing Departments.

E. M. Boxer, Colonel, R. A.,
Superintendent, Royal Laboratory.

No. 3.—Royal Laboratory, Woolwich Arsenal—*continued.*

STATEMENT (E.)

CAPITAL ACCOUNT of the Royal Laboratory, 1867–8.

Dr.

	£. s. d.	£. s. d.
To Balance for Net Amount of Capital on 1st April 1867:		
Land - - -	11,686 14 4	
Buildings - -	91,772 4 8	
Machinery - -	147,965 6 5	
		251,424 5 5
To Army Supplies, 1867–8: For Amount expended during the Year, viz.:		
Land - - -	7,345 – –	
Buildings - -	14,059 10 4	
Machinery - -	26,822 9 6	
		48,226 19 10
	£.	299,651 5 3

Cr.

	£. s. d.	£. s. d.
By Production—For one Year's Depreciation on Plant, &c., viz.:		
5 per Cent. on Buildings (91,772*l.* 4*s.* 8*d.*, per contra) - - -	4,588 12 3	
10 per Cent. on Machinery (147,965*l.* 6*s.* 5*d.*, per contra) -	14,796 10 8	
		19,385 2 11
Old Gun Metal from Machinery returned into Departmental Store -	118 10 –	
Old Machinery issued to the Principal Superintendent of Stores -	3 – 9	
		121 10 9
By Balance for Net Amount of Capital on 31st March 1868:		
Land - - -	19,031 14 4	
Buildings - -	101,243 2 9	
Machinery - -	159,869 14 6	
		280,144 11 7
	£.	299,651 5 3

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

E. M. Boxer, Colonel, R. A.,
Superintendent, Royal Laboratory.

— No. 4. —

ROYAL GAS FACTORY, WOOLWICH ARSENAL.

(A.)—BALANCE SHEET (No. 1) of the Royal Gas Factory, Royal Arsenal, Woolwich, 1867–68.

Dr.

	£. s. d.	£. s. d.
To Balance:		
For Stores in Stock on 1st April 1867 -	- -	527 12 1
To Army Supplies—For Cash advanced through the Paymaster General, and expended on the following Services during the Year:		
Salaries - - - - - -	250 - -	
Wages - - - - - -	3,110 5 3	
Stores and Materials - - -	8,546 17 3	
Gas Consumed - - - -	127 8 9	
Repairs to Buildings - - -	1,244 - 3¼	
Repairs to Machinery - - -	1,000 10 -	
Works Department - - -	64 - -	
Schools - - - - - -	- 8 11	
Miscellaneous Services - - -	4 4 -	14,347 14 5¼
To Sundry Departments—For Stores received from other sources - - -	- -	45 11 8½
	£.	14,920 18 2¾

Cr.

	£. s. d.	£. s. d.
By Balance:		
For Stores in Stock on 31st March 1868	- -	771 11 2¼
By Amount to be charged to the Production of the Year 1868–69:		
For Repairs to Buildings - -	622 - -	
For Repairs to Machinery - -	500 - -	1,122 - -
By Production Account:		
For Work performed for various Departments, including Altering and Repairing the Gas Fittings generally	1,203 5 7	
For Coke, Tar, Liquor, Breeze, &c. -	2,376 13 6	
cub. ft.		
For Gas produced - - 88,799,000		
Less, Leakage from General Mains - - - 4,672,128		
84,126,872	9,389 - 11½	12,969 - -½
By Sundry Departments—For value of Stores issued during the Year - -	- -	58 7 -
	£.	14,920 18 2¾

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

John Anderson,
Superintendent of Machinery and Royal Gas Factory.

(B.)—BALANCE SHEET (No. 2) of the Royal Gas Factory, Royal Arsenal, Woolwich, 1867–68.

Dr.

	£. s. d.	£. s. d.
To Balance;		
For Stores in Stock on 1st April 1867 -	- -	527 12 1
To Army Supplies—For Cash advanced through the Paymaster General, and expended on the following Services during the Year:		
Salaries - - - - - -	250 - -	
Wages - - - - - -	3,110 5 3	
Stores and Materials - - -	8,546 17 3	
Gas Consumed - - - -	127 8 9	
Repairs to Buildings - - -	1,244 - 3¼	
Repairs to Machinery - - -	1,000 10 -	
Works Department - - -	64 - -	
Schools - - - - - -	- 8 11	
Miscellaneous Services - - -	4 4 -	14,347 14 5¼
To One Year's Interest, at 3½ per cent., on Invested Capital in Buildings, Machinery, and Stores in Stock, on 1st April 1867, 19,806 *l.* 11 *s.* 1 *d.* - -	693 4 7	
To One Year's Interest, at 3½ per cent., on Working Capital, viz., one-fifth of Annual Expenditure - - - -	100 14 6	
To Depreciation, at 5 per cent. on Buildings, and 10 per cent. on Machinery (as per Capital Account) - - - -	1,422 1 6	2,216 - 7
To Sundry Departments—For Stores received from other sources - - -	- -	45 11 8½
	£.	17,136 18 9¾

Cr.

	£. s. d.	£. s. d.
By Balance:		
For Stores in Stock on 31st March 1868 - - - - - -	- -	771 11 2¼
By Amount to be charged to the Production of the Year 1868–69:		
For Repairs to Buildings - -	622 - -	
For Repairs to Machinery - -	500 - -	1,122 - -
By Production:		
For Work performed for the various Departments, including Altering and Repairing the Gas Fittings generally	1,203 5 7	
For Coke, Tar, Liquor, Breeze, &c. -	2,376 13 6	
cub. ft.		
For Gas produced - - 88,799,000		
Less, Leakage from General Mains - - - 4,672,128		
84,126,872	11,605 1 6½	15,185 - 7½
By Sundry Departments—For value of Stores issued during the Year - -	- -	58 7 -
	£.	17,136 18 9¾

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

John Anderson,
Superintendent of Machinery and Royal Gas Factory.

No. 4.—Royal Gas Factory, Woolwich Arsenal—*continued.*

STATEMENT (C.)

CAPITAL ACCOUNT of the Royal Gas Factory, Woolwich Arsenal, 1687–68.

Dr. *Cr.*

	£. s. d.	£. s. d.		£. s. d.	£. s. d.
To Balance:			By Production:		
For Amount of Capital on 1st April 1867, viz.:			For One Year's Depreciation on Plant, viz.:		
Buildings - - -	10,116 7 4		Five per cent. on Buildings (10,116 *l.* 7 *s.* 4 *d.* per contra) - -	505 16 4	
Machinery - - -	9,162 11 8				
		19,278 19 –	Ten per cent. on Machinery (9,162 *l.* 11 *s.* 8 *d.* per contra) - - -	916 5 2	
					1,422 1 6
			By Balance:		
			For Net Amount of Capital on 31st March 1868, viz.:		
			Buildings - - -	9,610 11 –	
			Machinery - - -	8,246 6 6	
					17,856 17 6
	£.	19,278 19 –		£.	19,278 19 –

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

J. Anderson,
Superintendent of Machinery and Royal Gas Factory.

ROYAL SMALL ARMS FACTORY, ENFIELD.

(A.)—BALANCE SHEET (No. 1) of the Royal Small Arms Factory, Enfield, 1867–68.

Dr.

	£.	s.	d.	£.	s.	d.
To Balance:						
For Stores in Stock, 1st April 1867	24,650	10	2			
For Semi-manufactured Articles in Stock, 1st April 1867	31,886	1	–	56,536	11	2
To Army Supplies, 1867–68, for Cash advanced through the Paymaster General, and expended on the following Services during the year ended 31st March 1868, viz.:						
Salaries	3,877	–	2			
Pay of Medical Practitioner	316	1	1			
Wages	123,475	7	9			
Wages to Men Invalided upon Medical Certificate	707	9	5			
Stores, Materials, &c.	25,440	4	3			
Miscellaneous Services	6,538	1	1			
Proportion of Expenditure in respect of Chemical Department at Woolwich	50	–	–			
Police	761	19	8			
Library	8	3	–			
Poor Rates	109	–	–			
Divine Service and Schools	310	19	–			
Military Pay of Officers	676	15	5			
Proportion of the Expenditure in respect of the Establishment of the Inspector of Works Department, War Office, Pall Mall	348	–	–			
Repairs to Buildings, &c.	2,642	5	7			
New Buildings and Additions	899	6	1			
New Machinery	1,471	–	6			
Superannuations and Gratuities	370	4	1	168,001	17	1
To Miscellaneous Services, 1867–68:						
For Expenditure not defrayed out of Army Supplies, viz.: Stationery	198	8	2			
Rental Value of Range, and of Cottages occupied by Persons in the Factory (not paying Rent)	200	–	10	398	9	–
To Sundry Departments, 1867–68:						
For Stores, &c., received from various sources	–	–	–	17,646	5	8
			£.	242,583	2	11

Cr.

	£.	s.	d.	£.	s.	d.
By Balance:						
For Stores in Stock on 31st March 1868	31,288	3	6			
For Semi-manufactured Articles in Stock on 31st March 1868	28,984	1	9	60,272	5	3
By Capital Account:						
For New Buildings added during 1867–68	399	12	2			
For Miscellaneous Plant transferred	781	14	11			
For Tools transferred	253	1	2	1,434	8	3
By Production Account:						
For Miscellaneous Services performed during 1867–68	22,066	11	9			
For Manufactures during 1867–68 (*see* separate Statement)	143,198	10	7	165,265	2	4
By Sundry Departments:						
For Stores issued during 1867–68	5,046	8	4			
For Stores sold to Artificers and others	4,033	6	9			
For Wages and Stores applicable to the Model Branch (distinct from the General Factory), for 1867–68	3,274	7	–			
For Sundry Services connected with the Small Arms Department, but distinct from the Royal Small Arms Factory	1,921	9	6			
For Sundry Experimental Services at Enfield	126	18	7			
For Sundry Services for the Ordnance Select Committee, Woolwich	94	16	4			
For Sundry Services connected with the Instruction of Armourers, at Home and Foreign Stations, in the Repair of Snider Arms	718	3	–			
For Sundry Services performed on Repayment, exclusive of the Indian Government	380	11	5			
For Sundry Services connected with Paris Exhibition	15	6	2	15,611	7	1
			£.	242,583	2	11

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

Wm. M. Dixon, Colonel, R. A.,
Superintendent.

No. 5.—Royal Small Arms Factory, Enfield—*continued.*

(B.)—BALANCE SHEET (No. 2) of the Royal Small Arms Factory, Enfield, 1867–68.

Dr.

	£. s. d.	£. s. d.
To Balance:		
For Stores in Stock, 1st April 1867	24,650 10 2	
For Semi-manufactured Articles, 1st April 1867	31,886 1 –	
		56,536 11 2
To Army Supplies, 1867–68, for Cash advanced by the Paymaster General, and expended on the following Services, during the Year ended 31st March 1868, viz.:		
Salaries	3,877 – 2	
Pay of Medical Practitioner	316 1 1	
Wages	123,475 7 9	
Wages to Men Invalided upon Medical Certificate	707 9 5	
Stores, Materials, &c.	25,440 4 3	
Miscellaneous Services	6,538 1 1	
Portion of Expenditure in respect of Chemical Department at Woolwich	50 – –	
Police	761 19 8	
Poor Rates	109 – –	
Library	8 3 –	
Divine Service and Schools	310 19 –	
Military Pay of Officers	676 15 5	
* Proportion of Expenditure in respect of the Establishment of the Inspector of Works Department, War Office, Pall Mall	348 – –	
Repairs to Buildings, &c.	2,642 5 7	
New Buildings (additions)	899 6 1	
New Machinery	1,471 – 6	
Superannuations and Gratuities	370 4 1	
		168,001 17 1
To One Year's Interest, at 3½ per cent., on Invested Capital, 1867–68, viz.:	£. s. d.	
Buildings and Land	67,870 16 4	
Range and Butts	7,089 7 9	
Machinery	65,467 8 9	
Tools	17,963 13 –	
Stores and Semi-manufactured Articles on Stock, 31st March 1867	56,536 11 2	
	£. 214,927 17 –	
	7,522 9 6	
To One Year's Interest, at 3½ per cent., on Working Capital, viz.: One-fifth of the Net Annual Expenditure, say 35,393 *l.* 7 *s.* 4 *d.*	1,238 15 4	
To Depreciation, viz.: 5 per cent. on Buildings and Tools, and 10 per cent. on Machinery (as per Capital Account)	10,703 11 5	
		19,464 16 3
To Miscellaneous Services:		
For Expenditure not Defrayed out of Army Supplies, viz.:		
Stationery	198 8 2	
Rental Value of Range and of Cottages occupied by Persons employed in the Factory, not paying Rent	200 – 10	
		398 9 –
To Sundry Departments:		
For Stores, &c., received from various sources	– – –	17,646 5 8
	£.	262,047 19 2

Cr.

	£. s. d.	£. s. d.
By Balance:		
For Stores in Stock on 31st March 1868	31,288 3 6	
For Semi-manufactured Articles	28,984 1 9	
		60,272 5 3
By Capital Account:		
For New Buildings added during the year 1867–68	399 12 2	
For Miscellaneous Plant transferred	781 14 11	
For Tools transferred	253 1 2	
		1,434 8 3
By Production Account:		
For Miscellaneous Services performed during 1867–68	24,591 14 3	
For Manufactures during 1867–68, as per Statement	159,399 5 1	
		183,990 19 4
By Sundry Departments:		
For Stores issued during 1867–68	5,046 8 4	
For Stores sold to Artificers and others	4,033 6 9	
For Wages and Stores applicable to the Model Branch (distinct from the General Factory), for 1867–68	3,644 15 10	
For Expenditure on Sundry Services connected with the Small Arms Department, but distinct from the Royal Small Arms Factory	2,138 17 3	
For Expenditure on Experimental Services at Enfield	141 5 10	
For Expenditure on Services for the Ordnance Select Committee	105 10 11	
For Expenditure on Services in connection with the Instruction of Armourers, at Home and Foreign Stations, in the repair of Snider Arms	799 8 –	
For Expenditure on Services performed on Repayment, exclusive of those for India Government	423 12 7	
For Sundry Services connected with the Paris Exhibition	17 – 10	
		16,350 6 4
	£.	262,047 19 2

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

(C.)—STATEMENT

(C.)—STATEMENT showing COST and PRODUCTION for the Year ending 31st March 1868, prepared in accordance with War Office Order of 26th June 1861.
(77—Gen. No.—1076.)

Dr.

	£.	s.	d.
To Balance from 1st April 1867, comprising Land and Buildings, Tools, Machinery, &c., as per Account, to 31st March 1868	241,140	8	7
To Expended during 1867-68:			
Buildings	3,541	11	8
Machinery	1,471	–	6
Stores	43,265	12	8
Salaries	4,848	10	7
Wages	124,182	17	2
Miscellaneous Expenses	8,717	13	9
£.	427,167	14	11

Cr.

	£.	s.	d.	£.	s.	d.
By Land, to 31st March 1867						
				2,698	–	–
„ Buildings	65,172	16	4			
„ Less, Depreciation of Buildings, at 5 per cent.	3,258	12	10			
				61,914	3	6
„ Buildings, New Account				399	12	2
„ Rifle Range and Butts				7,089	7	9
„ Machinery, to 31st March 1867	87,890	12	4			
„ Less, Depreciation, at 5 per cent. £. 4,393 11 4; „ Less, Machinery Expended 19 5 5	4,412	16	9			
				83,477	15	7
„ Tools, Net Valuation				20,823	16	10
„ Miscellaneous Plant				781	14	11
„ Components of Arms in Conversion				30,075	2	8
„ Stores, &c. on hand				31,288	3	6
„ Arms and Implements (at Cost Price) sent into Store at the Tower, and supplied to the India Government, &c.				150,125	13	7
„ Components (spare parts of Arms), Miscellaneous Stores, &c. sent into Store at the Tower, and supplied to the India Government, &c.				22,795	–	8
„ Sundries issued to Woolwich				245	16	11
„ Sundries issued to Waltham Abbey Powder Mills				13	–	8
„ Sundries issued to Birmingham Small Arms Department				1,457	–	2
„ Sundries issued to Pimlico Small Arms Department				388	9	8
„ Sundries issued to Model Branch (distinct from General Factory)				3,297	10	2
„ Sundries issued to Stocks Account (for Wages, Stores, &c.)				1,587	1	2
„ Sundries issued to Secretary of State for War (Patterns, &c. to War Office)				5	17	6
„ Sundries issued to Weedon				9	2	8
„ Sundries issued to Dover				2	9	4
„ Sundries issued to Army Clothing Department				2	2	–
„ Sundries issued to Ordnance Select Committee				94	19	–
„ Sundries issued to Small Arms Department, Bow, for the view of Converted Breech-loading Arms				584	11	11
„ Sundries issued to Small Heath, for the view of Converted Breech-loading Arms				75	–	5
„ Sundries issued on Repayment, &c.				414	12	10
„ Expended on Sundry Miscellaneous Services				704	1	4
„ Expended on Services connected with the Small Arms Department, but distinct from the Royal Small Arms Factory				1,921	9	6
„ Expended on Sundry Experimental Services at Enfield				126	18	7
„ Expended on the Instruction of Armourers, at Home and Foreign Stations, in the Repair of Snider Breech-loading Arms				720	7	–
„ Expended on account of the Paris Exhibition				15	6	2
„ Stores sold to Artificers and others during 1867-68				4,033	6	9
£.				427,167	14	11

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

Wm. M. Dixon, Colonel, R.A.,
Superintendent.

No. 5.—ROYAL SMALL ARMS FACTORY, ENFIELD—*continued.*

(D.)—STATEMENT showing SMALL ARMS and IMPLEMENTS for SMALL ARMS fabricated at the ROYAL SMALL ARMS FACTORY and sent into Store at the Tower, or delivered at the India Stores Depôt, during the Year ended 31st March 1868.

DESCRIPTION.	No.	As per BALANCE SHEET, (77 G. N.—1076.)		As per BALANCE SHEET, No. 1.		As per BALANCE SHEET, No. 2.	
		Rate.	Value.	Rate.	Value.	Rate.	Value.
		d.	£. s. d.	d.	£. s. d.	d.	£. s. d.
Muskets, Smooth Bore	18,540	408·57	31,562 2 7	389·72	30,105 15 7	433·81	33,511 15 9
Fusils, Serjeants', Smooth Bore	520	401·16	869 3 5	382·65	829 1 4	425·94	922 17 3
Carbines, Cavalry - ditto	9,640	356·10	14,303 6 –	339·67	13,643 6 3	378·09	15,186 16 11
Rifles, Musket, Pattern 53, converted to Breech-loaders on Snider's Principle	47,026	215·29	42,183 10 8	205·35	40,237 1 7	228·58	44,789 5 9
Rifles, Short - - - ditto - - - - - - ditto - -	14,120	227·13	13,362 15 –	216·65	12,746 3 3	241·16	14,188 3 11
Rifles, Naval - - - ditto - - - - - - ditto - -	15,603	233·29	15,166 15 8	222·53	14,466 19 1	247·70	16,103 13 4
Carbines, Artillery - - ditto - - - - - - ditto - -	15,219	217·94	13,819 16 2	207·88	13,182 2 7	231·39	14,673 9 8
Carbines, Cavalry - - ditto - - - - - - ditto - -	11,981	231·34	11,548 18 10	220·67	11,016 – 11	245·64	12,262 6 10
Carbines, Sappers - - ditto - - - - - - ditto - -	2	257·50	2 2 11	245·50	2 – 11	273·00	2 5 6
Lances, Service, complete	360	316·34	474 10 4	301·75	452 12 5	335·89	503 16 7
Lances, Practice, complete	301	308·41	386 16 –	294·18	368 19 1	327·46	410 13 11
Lances, incomplete (without Spears)	300	180·42	225 10 6	172·10	215 2 5	191·57	239 9 2
Foils, Fencing	450	66·68	125 – 5	63·60	119 5 1	70·80	132 14 11
Foil Blades (spare)	450	37·05	69 9 3	35·34	66 5 2	39·34	73 15 1
Nipple Wrenches, Privates', for Smooth Bore Arms	13,500	15·61	878 – 11	14·89	837 10 7	16·57	932 5 8
Ditto - Serjeants' - ditto	500	22·62	47 2 5	21·57	44 18 11	24·02	50 – 8
Muzzle Stoppers, Brass - - ditto	22,000	3·31	303 7 7	3·16	289 7 7	3·51	322 2 5
Muzzle Stopper Shanks	200	·33	– 5 6	·31	– 5 3	·35	– 5 10
Snap Caps and Chains, N. P., for Converted Breech-loading Arms	52,478	1·73	378 3 7	1·65	360 14 7	1·84	401 10 10
Ditto - for Smooth Bore Arms	5,000	1·77	36 16 1	1·68	35 2 1	1·88	39 1 6
Spare Leathers for Snap Caps	174,177	·42	307 1 2	·40	292 17 10	·45	326 – 7
Cleaning Rods for Cavalry Carbines, Breech-loading	12,238	10·96	558 15 7	10·45	532 19 11	11·64	593 5 11
Ditto - Naval Rifles, Breech-loading	499	12·61	26 4 5	12·03	25 – 3	13·40	27 16 10
Sword Bayonets for Irish Constabulary Carbine, Breech-loading	5,988	113·55	2,833 2 11	108·31	2,702 8 4	120·57	3,008 3 1
Leather Scabbards for - ditto	5,764	27·35	656 15 8	26·08	626 9 7	29·04	697 7 2
		£.	150,125 13 7	- -	143,198 10 7	- -	159,399 5 1

(Examined)
James C. Hurst,
Accountant, and Auditor to Manufacturing Departments.

Wm. Dixon, Colonel, R.A.,
Superintendent.

(E.)—CAPITAL ACCOUNT of the Royal Small Arms Factory, Enfield, 1867-68.

Dr.

	£. s. d.	£. s. d.
To Balance:		
For Net Amount of Capital to the 31st March 1867 (*see* Parliamentary Paper, No. 66, dated War Office, 3rd June 1868:		
Land	2,698 – –	
Buildings	65,172 16 4	
Rifle Range and Butts	7,089 7 9	
Machinery	65,467 8 9	
Tools	17,963 13 –	158,391 5 10
To Army Supplies, 1867-68:		
For Amount expended during the Year 1867-68, viz.:		
Buildings	- - -	399 12 2
To Store Account:		
For Miscellaneous Plant transferred	781 14 11	
For Tools transferred	253 1 2	1,034 16 1
	£.	159,825 14 1

Cr.

	£. s. d.	£. s. d.
By Productions, 1867-68:		
For One Year's Depreciation on Plant, &c., viz.:		
Five per cent. on Buildings, 65,172 *l.* 16 *s.* 4 *d.*	3,258 12 10	
Five per cent. on Tools, 17,963 *l.* 13 *s.*	898 3 8	
Ten per cent. on Machinery, 65,467 *l.* 8 *s.* 9 *d.*	6,546 14 11	10,703 11 5
By Sundry Departments:		
For value of Tools transferred during 1867-68	- - -	28 1 11
By Production Account:		
For value of Machinery expended during 1867-68	- - -	19 5 5
By Balance:		
For Net Amount of Capital on the 31st March 1868, viz.:		
Land	2,698 – –	
Buildings	62,313 15 8	
Rifle Range and Butts	7,089 7 9	
Machinery and Miscellaneous Plant	59,683 3 4	
Tools	17,290 8 7	149,074 15 4
	£.	159,825 14 1

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

— No. 6. —

ROYAL GUNPOWDER FACTORY, WALTHAM ABBEY.

(A.)—BALANCE SHEET (No. 1) of the ROYAL GUNPOWDER FACTORY, WALTHAM ABBEY, 1867-8.

Dr.

	£. s. d.	£. s. d.
To Balance;		
For Stores in Stock on 1st April 1867 -	147,440 15 4¾	
Semi-manufactured Articles in Stock on 1st April 1867 - - - -	2,849 5 9¾	150,290 1 2½
To Army Supplies, 1867-8;		
For Cash advanced through the Paymaster General, and expended on the following Services during the Year, viz.:		
Salaries - - - - - -	2,065 16 10	
Wages - - - - - -	9,667 - 3¾	
Wages of Men Invalided on Medical Certificate - - - -	157 9 8¼	
Stores, Materials, &c. - - -	7,701 - 11½	
Miscellaneous Services - - -	720 7 2	
Divine Service and Schools - -	80 - -	
Medical Expenses - - -	66 - 4	
Repairs and Alterations to Machinery - - - - - -	64 16 3	
Repairs and Alterations to Buildings - - - - - -	1,561 19 1	
New Buildings - - - -	4,745 14 5¾	
Military Pay of Officers - -	676 - -	
Superannuations - - - -	631 17 11	
Police - - - - - -	1,140 2 4	
Rates - - - - - - -	101 6 4	
Proportion of Inspector of Works Department - - - -	105 - -	
Chemical Department - - -	50 - -	29,534 11 8¼
To Miscellaneous Services, 1867-8:		
For Expenditure not defrayed out of Army Supplies, viz.:		
Stationery - - - - - -	21 4 3½	
Rates by Treasury - - -	63 6 5	84 10 8½
To Sundry Departments during the Year, viz.:		
For Stores received from various Sources - - - - - -	20,285 - 10¼	
Rental Value of Houses occupied by Officers, &c. - - - -	241 15 -	20,526 15 10¼
	£.	200,435 19 5½

Cr.

	£. s. d.	£. s. d.
By Balance;		
For Stores in Stock on 1st April 1868	133,490 1 6¼	
Semi-manufactured Articles in Stock on 1st April 1868 - - -	2,506 16 1¼	135,996 17 7½
By Capital Account, viz.:		
New Buildings during the Year - -	4,745 14 5¾	
New Machinery issued from Store -	5,085 11 1¼	
Cost of Erecting New Machinery -	345 - -	10,176 5 7¼
By Production Account, viz.:		
For Services performed during the Year	1,630 - 6½	
For Powder Manufactured, as per Statement (C.) - - - -	40,016 10 7	41,646 11 1½
By Sundries, viz.:		
Stores issued to other Departments -	12,448 - 2¾	
Sale of Old Stores, &c. - - -	168 4 10½	12,616 5 1¼
	£.	200,435 19 5½

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

C. W. Younghusband,
Colonel, Royal Artillery,
Superintendent.

No. 6.—Royal Gunpowder Factory, Waltham Abbey—*continued.*

(B.)—BALANCE SHEET (No. 2) of the Royal Gunpowder Factory, Waltham Abbey, 1867-8.

Dr.

	£. s. d.	£. s. d.
To Balance:		
For Stores in Stock on 1st April 1867	147,440 15 4¾	
For Semi-manufactured Articles on 1st April 1867 - - - - -	2,849 5 9¾	
		150,290 1 2½
To Army Supplies, 1867-8:		
For Cash advanced through the Paymaster General, and expended on the following Services during the Year, viz.:		
Salaries - - - - -	2,065 16 10	
Wages - - - - -	9,667 – 3¾	
Wages of Men invalided on Medical Certificate - - -	157 9 8¼	
Stores, Materials, &c. - -	7,701 – 11½	
Miscellaneous Services - -	720 7 2	
Divine Service and Schools - -	80 – –	
Medical Expenses - - -	66 – 4	
Repairs and Alterations to Machinery - - - - -	64 16 3	
Repairs and Alterations to Buildings - - - - -	1,561 19 1	
New Buildings - - - -	4,745 14 5¾	
Military Pay of Officers - -	676 – –	
Superannuations - - -	631 17 11	
Police - - - - -	1,140 2 4	
Rates - - - - -	101 6 4	
Proportion for Inspector of Works Department - - - -	105 – –	
Chemical Department - -	50 – –	
		29,534 11 8¼
To One Year's Interest, at 3½ per cent., on value of Invested Capital in Buildings, Machinery, Stores, and Semi-manufactured Articles in Store on 31st March 1867, viz.: £. 356,330 15 4¼		
Deduct value of Stores stored at this Station for public convenience - - 88,517 10 3½		
£. 267,813 5 –¾	9,373 9 3¼	
To One Year's Interest, at 3½ per cent., on Working Capital, viz.:—One-fifth of annual expenditure - - - - -	209 – 6	
To Depreciation, at 5 per cent. on Buildings, 10 per cent. on Machinery, and 20 per cent. on Tools and Plant, as per Capital Account - - - -	9,711 5 2½	
		19,293 14 11¾
To Miscellaneous Services, viz.:		
For Expenditure not defrayed out of Army Supplies, viz.:		
Stationery - - - - -	21 4 3½	
Rates by Treasury - - -	63 6 5	
		84 10 8½
To Sundry Departments:		
For Stores received from various Sources during 1867-8 - -	20,285 – 10¼	
Rental Value of Houses occupied by Officers, &c. - - - -	241 15 –	
		20,526 15 10¼
	£.	219,729 14 5¼

Cr.

	£. s. d.	£. s. d.
By Balance:		
For Stores in Stock on 1st April 1868	133,490 1 6¼	
For Semi-manufactured Articles in Stock on 1st April 1868 - .	2,506 16 1¼	
		135,996 17 7½
By Capital Account:		
For New Buildings added during the Year - - - - - -	4,745 14 5¾	
For New Machinery issued from Store - - - - - -	5,085 11 1½	
For Cost of erecting New Machinery	345 – –	
		10,176 5 7¼
By Production Account:		
For Services performed during the Year - - - - - -	2,385 3 6	
For Powder Manufactured, as per Statement (C.) - - - -	58,555 2 7¼	
		60,940 6 1¼
By Sundries, viz.:		
Stores issued to other Departments, 1867-8 - - - - -	12,448 – 2¾	
Sale of Old Stores - - - -	168 4 10½	
		12,616 5 1¼
	£.	219,729 14 5¼

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

C. W. Younghusband,
Colonel, Royal Artillery,
Superintendent.

No. 6.—Royal Gunpowder Factory, Waltham Abbey—*continued.*

(C.)—STATEMENT of the Manufacture in the Royal Gunpowder Factory, Waltham Abbey, 1867-8.

Description of Manufacture.	Quantity.	Labour.	Material.	Indirect Expenditure.	Balance Sheet, No. 1.		Balance Sheet, No. 2.	
					Rate, say	Total.	Rate, say	Total.
	Barrels.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Powder, Rifle, Fine Grain - - - -	6,077¾	3,434 18 6½	11,755 14 7¾	5,652 11 10½	3 8 7	20,843 5 -¾	5 - 4½	30,499 7 6¾
Powder, Rifle, Large Grain - - - -	7,326	2,704 19 -	11,054 14 6	4,494 5 7¾	2 9 10	18,253 19 1¾	3 12 11	26,710 10 7½
Powder, Meal - - - - - - - -	300	52 3 -½	397 12 9¼	87 10 6¾	1 15 10½	537 6 4½	2 12 5	786 5 -¼
Powder, Rocket Composition - - - -	224	31 11 10¼	275 12 10¼	54 15 3½	1 14 2	332 - -	2 9 11	558 19 4¾
	£.	6,223 12 5¼	23,483 14 9¼	10,289 3 4½	- - -	40,016 10 7	- - -	58,555 2 7¼

Examined,

James C. Hurst,
Accountant and Auditor to the Manufacturing Departments.

C. W. Younghusband,
Colonel, Royal Artillery,
Superintendent.

STATEMENT (D.)—CAPITAL ACCOUNT, Royal Gunpowder Factory, Waltham Abbey, 1867–8.

Dr.

	£. s. d.	£. s. d.
To Balance:		
For Net Amount of Capital on 1st April 1867, viz.:		
Land	23,086 13 –	
Water Power	50,000 – –	
Buildings	98,956 17 9¾	
Machinery	28,568 8 –¾	
Tools and Miscellaneous Plant	5,428 15 3¼	
		206,040 14 1¾
To Army Supplies, 1867–8:		
For Amount expended during the Year, viz.:		
Buildings	4,745 14 5¾	
Erecting New Machinery	345 – –	
		5,090 14 5¾
To Store Account:		
For additions to Machinery in the Department		5,085 11 1½
	£.	216,216 19 9

Cr.

	£. s. d.	£. s. d.
By Production:		
For One Year's Depreciation on Plant, &c., viz.:		
5 per Cent. on Buildings (98,956 *l.* 17 *s.* 9¾ *d.* as per contra)	4,947 16 10¾	
10 per Cent. on Machinery (28,568 *l.* 8 *s.* 0¾ *d.* as per contra)	2,856 16 9¾	
20 per Cent. on Tools and Plant in Factory, 1st April 1865	1,096 11 6	
		9,711 5 2½
By Balance:		
For Net Amount of Capital 1st April 1868, viz.:		
Land	23,086 13 –	
Water Power	50,000 – –	
Buildings	98,754 15 4¾	
Machinery	31,142 2 4½	
Tools and Miscellaneous Plant	3,522 3 9¼	
		206,505 14 6½
	£.	216,216 19 9

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

C. W. Younghusband,
Colonel, Royal Artillery,
Superintendent.

— No. 7. —

ROYAL ORDNANCE FACTORIES, PORTSMOUTH.

(A.)—BALANCE SHEET, No. 1, of the Royal Ordnance Factories, Portsmouth, 1867–8.

Dr.

	£. s. d.	£. s. d.
To Balance:		
For Stores in Stock on the 1st April 1867 - - - - - - -	- - -	6,145 19 6¼
For Cash advanced through the Paymaster General, and expended on the following Services during the Year 1867–8:		
Salaries - - - - - -	540 11 3	
Wages - - - - - -	10,075 17 4	
Wages to Men invalided on Medical Certificate - - - -	97 3 10	
Establishment for Instruction, including Military Pay - -	94 19 9	
Stores, Materials, &c. - - -	7,333 – 7½	
Miscellaneous Services - -	84 4 6	
Gas - - - - - - -	66 14 5	
Water - - - - - -	11 15 4	
Medical Department - - -	38 8 4	
Schools - - - - - -	13 10 9	
Police - - - - - -	471 8 –	
Repairs to Buildings - - -	348 1 7¼	
Repairs to Machinery - - -	11 – –	
Superannuations - - - -	288 6 3	
Military Pay of Officers - -	242 4 6	
New Buildings - - - -	690 3 –	
New Machinery and Miscellaneous Plant - - - - - -	201 5 –	
		20,608 14 5¾
To Miscellaneous Services, 1867–8:		
For Expenditure not defrayed out of Army Funds, viz.:		
Stationery - - - - - -	73 4 8¼	
Rates - - - - - -	100 – –	
Rental of Quarters - - -	65 – –	
		238 4 8¼
To Sundry Departments:		
For Stores, &c., received from various Sources - - - - - -	- - -	1,838 – 9½
Total - - - £.		28,830 19 5¾

Cr.

	£. s. d.	£. s. d.
By Balance:		
For Stores in Stock on the 31st March 1868 - - - - -	- - -	6,839 14 2½
By Capital Account:		
For New Buildings added during 1867–8 - - - - - -	690 3 –	
For New Machinery and Miscellaneous Plant added during 1867–8	201 5 –	
For Miscellaneous Plant issued from Store, 1867–8 - - - -	93 11 7	
		984 19 7
By Production Account, 1867–8:		
For Manufactures, as per detailed Statement (C.) - - - -	8,471 – 3¼	
For Conversions, Alterations, &c., as per Detailed Statement (D.) -	2,004 10 10½	
For Repairs, as per detailed Statement (E.) - - - - -	8,153 14 4½	
For Miscellaneous Services performed, as per detailed Statement (F.) -	2,087 7 –¾	
For Additions to Plant in the Department, as per detailed Statement (G.) - - - - - -	52 1 1	
		20,768 13 8
By Sundry Departments, 1867–8:		
For Serviceable Stores issued during 1867–8 - - - - - -	- - -	56 12 –¼
For Metal and Iron Turnings brought to account during 1867–8 - -	- - -	181 – –
Total - - - £.		28,830 19 5¾

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

G. Fraser, Brevet-Major, R.A.,
Superintendent.

No. 7.—Royal Ordnance Factories, Portsmouth—*continued.*

(B.)—BALANCE SHEET (No. 2) of the Royal Ordnance Factories, Portsmouth, 1867-8.

Dr.

	£. s. d.	£. s. d.
To Balance:		
For Stores in Stock on the 31st April 1867 - - - - - - -	- - -	6,145 19 6¼
To Army Supplies, 1867-8:		
For Cash advanced through the Paymaster General, and expended on the following Services during the Year ended 31st March 1868, viz.:		
Salaries - - - - - -	540 11 3	
Wages - - - - - -	10,075 17 4	
Wages to Men invalided on Medical Certificates - - -	97 3 10	
Establishment for Instruction -	94 19 9	
Stores, Materials, &c. - - -	7,333 - 7½	
Miscellaneous Services - -	84 4 6	
Gas - - - - - - -	66 14 5	
Water - - - - - -	11 15 4	
Police - - - - - -	471 8 -	
Medical Department - - -	38 8 4	
Schools - - - - - -	13 10 9	
Military Pay of Officers - -	242 4 6	
New Buildings - - - -	690 3 -	
Repairs to Buildings - - -	348 1 7¼	
New Machinery and Miscellaneous Plant - - - - - -	201 5 -	
Repairs to ditto - - -	11 - -	
Superannuations - - -	288 6 3	
		20,608 14 5¾
To Miscellaneous Services, 1867-8:		
For Expenditure not defrayed out of Army Funds, 1867-8:		
Stationery - - - - - -	73 4 8¼	
Rates - - - - - -	100 - -	
Rental of Quarters - - -	65 - -	
		238 4 8¼
To Sundry Departments, 1867-8:		
For Stores received from various Sources - - - - - - -	- - -	1,838 - 9½
To One Year's Interest at 3½ per cent. on invested Capital - - -	1,236 9 2¾	
„ One Year's Interest at 3½ per cent. on Working Capital - - -	158 15 9¼	
„ One Year's Depreciation, as per Capital Account - - - - - -	1,618 1 3	
		3,013 6 3
Total - - - £.		31,844 5 8¾

Cr.

	£. s. d.	£. s. d.
By Balance:		
For Stores in Stock on the 31st March 1868 - - - -	- - -	6,839 14 2½
By Capital Account:		
For New Buildings added during 1867-8 - - - - - -	690 3 -	
For New Machinery and Miscellaneous Plant added during 1867-8	201 5 -	
For Miscellaneous Plant issued from Store during 1867-8 - - -	93 11 7	
		984 19 7
By Production Account, 1867-8:		
For Manufactures, as per detailed Statement (C.) - - - -	9,706 2 4¼	
For Conversions, Alterations, &c., as per detailed Statement (D.) -	2,296 16 4½	
For Repairs, &c., executed as per detailed Statement (E.) - -	9,342 12 2½	
For Miscellaneous Services, as per detailed Statement (F.) - -	2,376 16 -¾	
For additions to Plant in Department, as per detailed Statement (G.)	59 12 11	
		23,781 19 11
By Sundry Departments, 1867-8:		
For Stores issued during 1867-8 -	- - -	56 12 -¼
For Metal and Iron Turnings brought to account during 1867-8 - -	- - -	181 - -
Total - - - £.		31,844 5 8¾

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

G. Fraser, Brevet-Major, R.A.,
Superintendent.

No. 7.—Royal Ordnance Factories, Portsmouth—*continued.*

DETAIL of Work performed by the Royal Ordnance Factories, Portsmouth, during the Year ended 31st March 1868.

STATEMENT (C.)—MANUFACTURES (GUN WHARF).

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Number.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		Manufactures:		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
25. 37. 148. 212 --7.	20 May 1867 - - (57--2--15,464.) 1 July 1867. (57--2--15,825.)	Axletrees, iron, transporting, complete, with pins and washers - - - - 9-in. 12 ton; 8 „ 9 „; 7 „ 6½ „	4; 2; 10	14 15 2	16 6 7	8 15 4	39 17 1	45 13 3
398--199 - 228. 269. 365--222.	7 August 1867 - - 14 October 1867. (57--2--16,344.) 3 August 1867. (57--2--15,992.) 3 August 1867. (57--2--15,991.)	Bags: Or coverings for barrels Quarter / Whole — Material supplied by M. S. Department; Canvas, instruments, extracting projectiles - - - - 9-in. - - - - 8-in. - - - - 7-in. - - - - 64-pounder, 64 cwt. -	80; 10; 11; 2; 21; 9	- 12 11; 1 2 11½	- -; 2 1 10¾	- 7 7; - 13 8	1 - 6; 3 18 6¼	1 3 6; 4 9 11¼
94--11 - -	10 April 1867 - - (57--Portsmouth--2569.)	Barrows: Wheel, open, common - - - - - - -	4	7 9 11½	4 1 10½	4 9 1	16 - 11	18 7 9
153. 323--84 -	16 May 1867. (57--2--15,511.) 6 September 1867. (57--2--16,207.)	Wheeling round shot - - - - - - - Transporting, 7-in., 8-in., and 9 in. M. L. R. projectiles -	1; 73	66 16 4½	58 17 3¼	39 13 9	165 7 4¾	189 9 7¾
94--12 - -	10 April 1867 - - (57--Portsmouth--2569.)	Bars, splinter, in the rough, issued as received from Woolwich	3	- -	- 12 -	- -	- 12 -	- 13 9
94--13 - -	10 April 1867 - - (57--Portsmouth--2569.)	Bearers: Iron for painted shot, with short handle - - -	10	1 18 2	- 5 9	1 1 6	3 5 5	3 14 11
156--85 - -	24 May 1867. (57--Portsmouth--2690.)	Shot and shell, 10-in., or 150-pounder smooth bore -	27	1 18 3	3 11 4½	1 1 6	6 11 1½	7 10 3½
10. 148. 156. 252. 365--1.	20 May 1867 - - (57--2--15,464.) 24 May 1867. (57--Portsmouth--2690.) 29 July 1867. (57--2--5990.) 14 October 1867. (57--2--16,344.)	Beds, wood: M. L. R. 9-in. 12 ton - - - - - - 8 „ 9 „ - - - - - - 7 „ 6½ „ - - - - - - 64-pounder, 64 cwt. - - - - - S. B. 10-in. 87 cwt. R. C. - - - - 68-pounder, 95 cwt. - - - - 32 „ 32 „ common - - - 9 „ 28 „ and 26 cwt. - - - 6 „ 17 „ common - - - Howitzer, 24-pounder, R. C. - -	4; 6; 12; 15; 6; 5; 21; 5; 7; 6	22 7 11½	9 16 6¾	13 6 3	45 10 9¼	52 3 5¼

94. 156—14 -	10 April 1867 - - (57—Portsmouth—2569.) 24 May 1867. (57—Portsmouth—2690.)	Bits, vent: 17 inches - - - - - - - - - - B. L. R. - - - - - - - - - -	136 32	7 11 10	– 14 9¼	4 10 3	12 16 10¼	14 14 5¼
77—10 - -	2 April 1867 - -	Bolts, iron: And nuts for 9-inch iron slides - - - - - -	24	– 17 2	– 5 1	– 10 1	1 12 4	1 17 1
450. 543—245	13 December 1867. (57—2—16,801.) 5 February 1868. (57—2—17,135.)	Fighting: 20-pounder B. L. R. - - - - - -	6	1 1 8½	– 10 4	– 12 11	2 4 11½	2 11 4½
		Fighting: 12 „ long - - - - - -	52	15 10 2½	7 1 –¾	9 4 3	31 15 6¼	36 8 2¼
		Fighting: 9 „ short - - - - - -	33					
137. 156—77 -	15 May 1867. (57—2—15,531.)	And stops for front, centre, eccentrics, traversing rollers for iron slides.	84	15 1 2½	2 10 6¾	8 19 –	26 10 9¼	30 8 1¼
177—216 -	7 June 1867. (57—2—15,664.)	For streak tire, with collars - - - - - -	4	– – 10	– – 2	– – 6	– 1 6	– 1 9
94—70 - -	10 April 1867. (57—Portsmouth—2569.)							
444—244 -	9 December 1867 - - (5722—10,255.)	Boat hooks, brass, double headed - - - - - -	1	– 4 2½	– 5 4	– 2 4	– 11 10½	– 13 6½
119—207 -	4 May 1867 - - - (57—P. Hard—461.)	Boxes, tube, No. 4 - - - - - - - - - -	150	56 12 6½	43 12 6	33 12 10	133 17 10½	153 8 4½
148. 212. 365—79.	20 May 1867 - - (57—2—15,464.) 1 July 1867. (57—2—15,825.) 14 October 1867. (57—2—16,344.)	Brackets: For roller handspikes, M.L. R.: 9-inch, 12 ton - -	18	36 4 3½	17 13 11½	21 10 7	75 8 10	86 9 10
		For roller handspikes, M.L. R.: 8 „ 9 „ - -						
		For roller handspikes, M.L. R.: 7 „ 6½ „ - -	27					
485—253 -	6 January 1868 - - (87—Genl. No. 135.)	Boxes, ammunition, small arm (in progress) - - -	–	5 1 –½	92 18 10¾	2 19 11	100 19 10¼	115 14 4¼
212—218 -	1 July 1867 - - - (57—2—15,825.)	Caps, canvas, sponge, 7-inch M. L. R. - - - -	2	– 1 2	– – 4¾	– – 8	– 2 2¾	– 2 6¾
94—18 - -	10 April 1867 - - (57—Portsmouth—2569.)	Carriages, wood, complete: Naval: Common, 64-pounder - - - - -						
94—19 - -	10 April 1867. (57—Portsmouth—2569.)	Naval: M. L. R., main deck - - - - - -	2	16 – 10	12 12 2	9 10 10	38 3 10	43 15 3
156—88 - -	24 May 1867. (57—Portsmouth—2690.)	Naval: Sliding, 64-pounder, 64 cwt. - - - -	1	24 19 5½	17 9 3¼	14 16 9	57 5 5¾	65 12 5¾
		Naval: R. C. 24-pounder howitzer - - - -						
		Naval: or 20-pounder B. L. - - - - -	4	16 10 11½	18 4 4¾	9 16 8	44 12 –¼	51 2 1¼
156—87 - -	24 May 1867. (57—Portsmouth—2690.)	Transporting, 9-inch, 8-inch, and 7-inch M. L. R. guns	5	20 6 4	50 17 3½	12 1 8	83 5 3½	95 8 1½
94—20 - -	10 April 1867 - - (57—Portsmouth—2569.)	Carts, with wheels: Hand, common - - - - - - - - -	3	51 13 2½	32 14 7	30 13 6	115 1 3½	131 16 9½
		Trench - - - - - - - - - -	3					
486—221 -	27 September 1867 - -	Cash tray (with 50 numbered divisions) - - - -	1	– 6 6	– 2 5¾	– 3 9	– 12 8¾	– 14 6¾

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (C.) Manufactures—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Number.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
				£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
156—89 -	24 May 1867 - - - (57—Portsmouth—2690.)	Cases:						
156—90. 44. 437—204.	24 May 1867. (57—Portsmouth—2690.)	Packing, fuzes - - - C. percussion - -	300	39 6 1	65 – 4	23 8 6	127 14 11	146 7 6
		7½″ Metal time -	500					
		20″ - - -	500					
		E. time - - -	500					
156—92 -	24 May 1867. (57—Portsmouth—2690.)	Facing implements, 7-inch B. L., with blocks - -	6	8 2 8½	4 9 –¾	4 16 8	17 8 5¼	19 19 2¼
		Packing - - - - - - - - - -	2	– 5 –¼	– 2 4¼	– 2 11	– 10 3½	– 11 9½
156—91 -	24 May 1867. (57—Portsmouth—2690.)	Straight edge, for testing breech screws - - -	42	3 9 4½	2 9 6¼	2 1 1	7 19 11¾	9 3 3¾
		Tin, for Bickford's fuze, 40 fathoms - - - -	100	7 18 4	5 10 11	4 14 –	18 3 3	20 16 3
94—23; 94—40	10 April 1867 - - - (57—Portsmouth—2569.)	Covers, canvas:						
		Ambulance wagon - - - - - - - -	1	1 2 10	2 9 2½	– 13 7	4 5 7½	4 18 –½
		Shot furnace - - - - - - - - -	1	– 8 3	– 14 4	– 4 9	1 7 4	1 11 4
411—241 -	20 November 1867 - -	Chisels, cold - - - - - - - - - -	12	– 3 2	– 3 8	– 1 9	– 8 7	– 9 10
94—21 - -	10 April 1867 - - (57—Portsmouth—2569.)	Chocks, wood, dismounting, 7-inch M. L. R. gun - -	2	1 10 6½	2 6 –¾	– 18 2	4 14 9¼	5 8 6¼
94. 156. 456—22	10 April 1867 - - (57—Portsmouth—2559.)	Coins, wood, for carriages:						
	24 May 1867. (57—Portsmouth—2690.) 16 December 1867. (61—Portsmouth Factory—402.)	Large - 7-inch 6½ ton M. L. R. - - - -	13	6 5 6	11 16 2¾	3 14 6	21 16 2¾	24 9 10¾
		24-pounder howitzer, and 20-pounder B. L.	6					
		9-pounder, 28 cwt., common - - -	15					
		6-pounder, 17 cwt. - - - - -	4					
		Small - 6-pounder brass gun, top and under - -	2					
		Mortar, 10-inch - - - - - - - -	2					
156. 593—215	24 May 1867 - - 6 March 1868. (57—Portsmouth—3690.)	Collars, leather, shell:						
		Naval, large - - - - - - - - -	10,000	1 4 6	9 19 5	– 14 7	11 18 6	13 13 3
		L. S., smooth bore - - - - - - -	10,000					
		20-pounder, rifled - - - - - - -	5,000					
156—93 - -	24 May 1867 - - - (57—Portsmouth—2690.)	Extractors, tin cup, and levers, lifting joint - - -	94	17 19 7½	3 16 5¾	10 13 11	32 10 –¼	37 4 10¼
94—24 -	10 April 1867 - - (57—Portsmouth—2569.)	Felloes, ash, in the rough:						
		12-pounder - - - - - - - - -	50	– – 5½	10 5 5¾	– – 3	10 6 2¼	11 16 4¼
		9-pounder - - - - - - - - -	30					
		Of sorts - - - - - - - - - -	1					

94. 148. 269. 365. 429—25.	10 April 1867 (57—Portsmouth—2569.) 20 May 1867. (57—2—15,464.) 14 October 1867. (57—2—16,344.)	Fids, wood: 9-inch, 12 ton M. L. R. 8 „ 9 „ „ 7 „ 6½ „ „ 64-pounder M. L. R. 32-pounder S. B.	1 10 12 4 1	2 18 8	11 15 6	1 14 9	16 8 11	18 16 11
94—26	10 April 1867 (57—Portsmouth—2569.)	Formers, wood: Nipple, 1 lb. rocket	2	- 9 7	- 1 4½	- 5 8	- 16 7½	- 19 1½
148. 269. 365—2.	20 May 1867. (57—2—15,464.) 14 October 1867. (57—2—16,344.)	Wad gun, M. L. R. 8-inch, 9 ton Wad gun, M. L. R. 7-inch, 6½ ton	9 5	2 4 9	4 7 6¾	1 6 7	7 18 10¾	9 1 11¾
94—27	10 April 1867 (57—Portsmouth—2569.)	Futchells in the rough (issued as received from Woolwich)	1	- -	- 3 2	- -	- 3 2	- 3 8
148—80	20 May 1867 (57—2—15,464.)	Handles, compressing pinion, wood carriage, 7-inch, 6½ ton	6	2 2 4½	- 4 10¼	1 5 1	3 12 3¾	4 2 10¾
94—31	10 April 1867 (57—Portsmouth—2569.)	Handspikes: Or levers, platform, shod with iron, 4 feet	23	1 8 6	1 12 -¾	- 16 8	3 17 2¾	4 8 4¾
94—30	10 April 1867. (57—Portsmouth—2569.)	Traversing, 12 or 9-pounder	30	3 12 8	2 2 -¾	2 3 3	7 17 11¾	9 1 -¾
156—95	24 May 1867. (57—Portsmouth—2690.)	Stop, 4 feet	283	41 3 6	64 8 5¾	24 9 9	130 1 8¾	149 1 -¾
94—32	10 April 1867 (57—Portsmouth—2569.)	Heads, rammer: 64-pounder M. L. R. 18 „ S. B. Mortar 10-inch Mortar 8-inch	6 2 1 2	- 6 6	- 2 6	- 3 6	- 12 6	- 14 3
94—33	10 April 1867 (57—Portsmouth—2569.)	Heads, spunge: 64-pounder, 64 cwt. M. L. 24 „ 50 „ 18 „ 42 „ 6 „ 17 „ 10-inch mortar	6 1 2 2 3	1 8 2½	4 12 1	- 16 8	6 16 11½	7 17 -½
94—35	10 April 1867 (57—Portsmouth—2569.)	Implements: Keys, iron, fuze and shell „ general service	14	3 1 4	- 13 10	1 16 6	5 11 8	6 7 11
25. 26. 94. 268. 269—8.	10 April 1867 (57—Portsmouth—2569.) 3 August 1867. (57—2—15,992.) 3 August 1867. (57—2—15,991.)	Instruments, extracting projectiles, M. L. R.: 9-inch, 12 ton (in progress last year) 8-inch, 9 ton 7-inch, 6½ ton (13 in progress last year) 64-pounder	8 2 15 2	60 2 7¼	3 17 5¾	35 15 3	99 15 4	114 6 2
94. 156—36.	10 April 1867 (57—Portsmouth—2569.) 24 May 1867. (57—Portsmouth—2690.)	Irons, priming, 17-inch	282	4 17 1	- 11 -½	2 17 7	8 5 8½	9 9 9½

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (C.) Manufactures—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Number.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
				£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
365—225 - -	14 October 1867 - - (57—2—16,344.)	Keys, iron, capsquare, with chains:						
156—96 - -	24 May 1867. (57—Portsmouth—2690)	9-inch, 12 ton, iron carriage - - - - - -	21	5 10 9½	1 9 7½	3 5 10	10 6 3	11 16 4
		8 „ 9 „ „ - - - - - -	10					
		7 „ 6½ „ „ - - - - - -	21					
		12 and 9-pounder - - - - - - - -	14	– 9 10½	– 5 –	– 5 11	1 – 9½	1 3 9½
94—37 - -	10 April 1867 - - (57—Portsmouth—2569.)	Ladders, double, step, magazine, 10 feet - - - -	9	16 2 11½	10 2 2½	9 12 –	35 17 2	41 1 10
128—200 -	23 March 1867 - - (57—P. Hard—453.)	Lanyards for friction tubes:						
206—206 -	4 May 1867. (57—P. Hard—461.)	L. S. - Long - - - - - - - -	50	– 16 8¼	– 2 2¼	– 9 10	1 8 8½	1 12 9½
		L. S. - Short - - - - - - - -	85					
		S. S. - Long - - - - - - - -	628	9 – 4	10 14 –¾	5 7 1	25 1 5¾	28 13 8¾
		S. S. - Short - - - - - - - -	135					
94—39 - -	10 April 1867 - - (57—Portsmouth—2569.)	Mauls, wood:						
		Large - - - - - - - - - -	32	3 2 9	2 3 –½	1 17 4	7 3 1½	8 4 –½
		Facine - - - - - - - - - -	5					
14—203 - -	23 March 1867 - - (57—Priddy's Hard—453.)	Masts for boats - - - - - - - - -	3	– 10 7½	1 8 6½	– 6 7	2 5 9	2 12 7
94—41 - -	10 April 1867 - - (57—Portsmouth—2569.)	Pedestals, wood:						
		32-pounder - - - - - - - - -	3	– 1 7	– 7 3½	– – 11	– 9 9½	– 11 3½
		8-inch gun - - - - - - - - -	4					
156. 496—97 -	24 May 1867 - - - (57—Portsmouth—2690.) 10 January 1868. (57—Portsmouth—2904.)	Pins, linch:						
		6-pounder brass gun - - - - - -	50	1 2 5	– 6 4	– 13 3	2 2 –	2 8 2
		Commissariat wagons - - - - - -	12					
156—98 - -	24 May 1867 - - - (57—Portsmouth—2690.)	Plates, guide lanyard, turret, large - - - - -	8	1 5 10	– 11 10¾	– 15 5	2 13 1¾	3 – 11¾
94—44 - -	10 April 1867 - - (57—Portsmouth—2569.)	Platforms:						
		Alderson's gun, 18 feet by 10 feet - - - -	2	5 15 3½	21 15 11¼	3 8 5	30 19 7¾	35 10 –¾
94—45 - -	10 April 1867. (57—Portsmouth—2569.)	Clerk's „ 17 feet long - - - - -	2	6 19 9	11 19 11¼	4 3 1	23 2 9¼	26 10 2¼
94—46; 148. 365—81.	10 April 1867 - - (57—Portsmouth—2569.)	Plugs, wood:						
		Preserving interior of Armstrong guns, various - -	940	5 9 9	23 7 8¾	3 5 3	32 2 8¾	36 16 1¾
		For sockets of hind turret sights - - - -	10	– 7 –	– 1 6¼	– 4 1	– 12 7¼	– 14 6¼
94—48 - -	10 April 1867 - - (57—Portsmouth—2569.)	Prickers for searching implements - - - - -	50	2 4 4½	– 3 9¼	1 6 4	3 14 5¾	4 5 3¾

406—237; 406 238.	15 November 1867 - -	Projectiles, wood, for drill:						
		7-inch M. L. R. - - - - - - -	2	– 14 6	1 – –½	– 8 8	2 3 2½	2 9 7½
		8 „ „ - - - - - - -	2	– 16 6	1 5 –½	– 9 8	2 11 2½	2 18 10½
24. 30. 37. 94. 148. 212. 365. 369—4.	10 April 1867 - - (57—Portsmouth—2569.) 20 May 1867. (57—2—15,454.) 3 August 1867. (57—2—15,991.) 14 October 1867. (57—2—16,344.)	Rammers, with staves, gun:						
		M. L. R. 9-inch, 12 ton (49 in progress last year) -	58	22 5 –½	51 9 –¾	13 4 5	86 18 6¼	99 11 11¼
		M. L. R. 8 „ 9 „ - - - - - - -	33					
		M. L. R. 7 „ 6½ „ (12 in progress last year) -	92					
156—99 - -	24 May 1867 - - (57—Portsmouth—2690.)	Rings, iron, trunnion, 24-pounder howitzer - - -	4	– 6 6	– 1 8¾	– 3 10	– 12 –¾	– 13 9¾
156—208 -	24 May 1867 - - - (57—Portsmouth—2690.)	Rivets, copper, for shell, tops, naval, 100-pounder - -	208	– 1 6	– 5 9	– – 10	– 8 1	– 9 3
94—49 - -	10 April 1867 - - (57—Portsmouth—2569.)	Rods for wood bottoms, with becket - - - - -	76	2 11 4½	– 13 6½	1 10 3	4 15 2	5 9 1
148—82 -	20 May 1867 - - - (57—2—15464.)	Rollers:						
156—209 -	24 May 1867. (57—Portsmouth—2690.)	Metal, wood slides:						
		Front, eccentric, 7-inch, 6½ ton - - - - - -	6	1 3 6	7 8 1	– 13 11	9 5 6	10 12 7
156—235 -	24 May 1867. (57—Portsmouth—2690.)	„ common, 7-inch B. L. R., 10-inch and 68-pounder S. B. - - - - - - -	26	2 10 4	19 7 4½	1 9 9	23 7 5½	26 16 7½
		Wood, running up, 10-inches, R. C. carriages - -	6	9 13 1½	26 15 1	5 14 8	42 2 10½	48 5 10½
94. 108. 156. 252. 268. 269. 365. 469. 543—54.	20 May 1867 - - - (57—2—15,464.) 3 August 1867. (57—2—15,992.) 3 August 1867. (57—2—15,991.) 14 October 1867. (57—2—16,344.) 21 December 1867. (57—2—16,898.)	Scales, wood, side tangent:						
		M. L. R. 9-inch, 12 ton - - - - - - -	12	22 19 11½	10 18 6½	13 13 2	47 11 8	54 10 6
		M. L. R. 8 „ 9 „ - - - - - - -	20					
		M. L. R. 7 „ 6½ „ - - - - - - -	83					
		M. L. R. 64-pounder, 64 cwt. - - - - -	110					
		B. L. R. 40-pounder, 35 cwt. - - - - -	4					
		B. L. R. 20 „ - - - - - - -	4					
		S. B.—6-pounder brass, 6 cwt. - - - - -	5					
257—220 -	30 July 1867 - - - (7871—3461.)	Scrapers, gun - - - - - - - - -	10	1 3 3½	– 7 9½	– 16 7	2 12 8	3 – 4

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (C.) Manufactures—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Number.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
				£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
450. 543—247	13 December 1867 - - (57—2—16,801.) 5 February 1868. (57—2—17,135.)	Screws:						
		Iron compressor, with adjusting and compressing lever - 20-pounder B. L. -	6	5 1 3	2 1 4	3 – 2	10 2 9	11 12 5
		12 „ „ -	48	75 – 11	25 11 8½	44 10 2	145 2 9½	166 5 10½
		9 „ „ -	29					
137. 156—78 -	15 May 1867. (57—2—15,531.) 24 May 1867. (57—Portsmouth—269.)	Iron, preserving, M. L. R. - Pivot piece - -	40					
		Guide plate - -	20	1 13 –	– 1 10	– 19 6	2 14 4	3 2 3
		Friction pin -	20					
156—210 -	24 May 1867. (57—Portsmouth—2690.)	Iron, saddle, 7-inch B. L. - - - - -	20	– 17 8	– 2 –	– 10 6	1 10 2	1 14 7
156—211 -	24 May 1867. (57—Portsmouth—2690.)							
14—201 - -	23 March 1867 - - (57—Priddy'sHard—453.)	Shoes, leather, magazine, pairs, Nos. 7 and 8 - -	30	2 15 6	5 18 4¾	1 12 10	10 6 8¾	11 16 11¾
406—236 -	15 November 1867 - -	Sights, centre, wood, 100-pounder, for drill - - -	12	1 3 4	– 1 8	– 13 10	1 18 10	2 4 6
94—61 - -	10 April 1867 - - - (57—Portsmouth—2569.)	Skids, wood:						
94—62 - -	10 April 1867. (57—Portsmouth—2569.)	Oak, English, with rope handles - 5 feet long × 6 inches × 5 inches	10					
		3½ „ „ × 4 „ square -	18					
		3 „ „ × 9 „ × 6 inches	22					
		3 „ „ × 9 „ × 3 „ -	11	4 – 2	21 15 5½	2 7 8	28 3 3½	32 4 11½
		3 „ „ × 6 „ square -	18					
		3 „ „ × 6 „ × 3 inches -	8					
		3 „ „ × 3 „ square -	18					
		Fir, with rope grummets - 14 „ „ × 8 „ „ - -	4					
		14 „ „ × 9 „ „ - -	4	1 2 9	15 15 5½	– 13 8	17 11 10½	20 3 –½
		20 „ „ × 9 „ „ - -	6					
94—63 - -	10 April 1867 - - (57—Portsmouth—2569.)	Slides, naval:						
		64-pounder, 64 cwt. M. L. R., 14 feet - - -	1	11 7 5½	26 5 5	6 15 4	44 8 2½	50 17 7½
137. 156—75 and 76.	15 May 1867. (57—2—15,531.) 24 May 1867. (57—Portsmouth—2690.)	12 „ B. L. (boat) - - - - -	42	284 16 1½	319 11 6¼	169 3 7	773 11 2¾	886 6 9¾
		9 „ „ „ - - - - -	25					
		20 „ „ (bow and stern) - - -	6	24 1 5	35 18 2	14 6 2	74 5 9	85 2 5
450. 543—246 -	13 December 1867. (57—2—16,801) 5 February 1868. (57—2—17,135)							
94—64; 94—65	10 April 1867 - - (57—Portsmouth—2569)	Slings for—						
		Sling wagon - - - - - - -	1	– 3 8	– 13 10½	– 2 1	– 19 7½	1 2 5½
		68-pounder gun - - - - - - -	1	– 1 9	1 9 3	– – 11	1 11 11	1 16 4

156. 365—214	24 May 1867 - - - (57—Portsmouth—2690.) 14 October 1867. (57—2—16,344.)	Sockets, iron, for levers:						
		Wood carriages { 7 inch, 6½ ton - - - -	8	52 9 10½	20 8 1	31 3 10	104 1 9½	119 5 2½
		Wood carriages { 64-pounder, 7-inch B. L. - - 40-pounder, 10-inch, and 68-pounder }	106					
		Wood slides { 7-inch, 6½ ton - - - -	26					
		Wood slides { 10 „ and 68-pounder S. B. - -						
		Iron carriages - - - - - - - -	36					
		Iron slides - - - - - - - - -	36					
94—67 - -	10 April 1867 - - (57—Portsmouth—2569.)	Spokes, oak, in the rough:						
		12-pounder } issued as received from Woolwich -	50	- -	8 15 5	- -	8 15 5	10 1 –
		9 „ } issued as received from Woolwich -	30					
		of sorts - } issued as received from Woolwich -	2					
94—56 - -	10 April 1867 - - (57—Portsmouth—2569.)	Spouting for shell - - - - - - - -	6	3 13 1½	2 15 9¾	2 3 3	8 12 2¼	9 17 3¼
94—68 - -	10 April 1867 - - (57—Portsmouth—2569.)	Springs for gun bore scrapers - - - - - -	1	– 17 1	– 2 5	– 10 –	1 9 6	1 13 6
24. 30. 37. 94. 212. 365. 429—6.	10 April 1867 - - (57—Portsmouth—2569.) 1 July 1867. (57—2—15,825.) 14 October 1867. (57—2—16,344.) 27 November 1867. (54—Marines—2786.)	Spunges:						
		With wood staves, without caps - { 9-inch, 12 ton M. L. R. -	1	12 9 1	54 7 10½	7 7 10	74 4 9¼	85 1 3¼
		8 „ 9 „ „ -	8					
		7 „ 6½ „ „ (in progress last year - - -	76					
		64-pounder, 64 cwt. - - -	6					
		9 „ B. L. - - -	12					
		24 „ 50 cwt., S. B. -	7					
26. 30. 365. 429—9.	14 October 1867. (57—2—16,344.) 27 November 1867. (54—Marines—2786.)	With rope staves and rammer-heads, without caps - - { 9-inch, 12 ton M. L. R. (28 in progress last year) -	29	8 3 11	19 4 6¼	4 17 6	32 5 11¼	36 19 10¼
		8 „ 9 ton - - -	6					
		7 „ 6½ „ (5 in progress last year) - - - -	6					
209—217 -	26 June 1867 - - - (57—2—15,812.)	Sticks, rocket, with rope tails, boat magazine, 18½ feet long, 1 lb. signal rocket - - - - - -	200	1 19 4½	1 12 6¾	1 3 5	4 15 4¼	5 9 3¼
148. 212. 245. 252. 261. 268. 269. 365—73.	20 May 1867 - - - (57—2—15,464.) 29 July 1867. (57—2—15,989.) 1 August 1867. (57—Portsmouth—2763.) 14 October 1867. (57—2—16,344.)	Tampeons, wood:						
		8-inch, 9 ton M. L. R. - - - -	52	53 3 11½	51 11 7½	31 12 –	136 7 7	156 5 3
		7 „ 6½ „ „ - - - - -	92					
		64-pounder, 64 cwt. - - - - -	194					
		10-inch smooth bore - - - - - -	61					
412—240 -	16 November 1867 - - (57—2—16,597.)	Thumbstalls, leather:						
		Sea service (in progress) - - - - -	–	2 12 11½	2 13 7	1 11 5	6 17 11½	7 18 1½
94—69 - -	10 April 1867. (57—Portsmouth—2569.)	Land service - - - - - - - -	8	– 1 9	– 1 3	– – 11	– 3 11	– 4 6

No. 7.—Royal Ordnance Factories, Portsmouth.—Statement (C.) Manufactures—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Number.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
				£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
212—219 -	1 July 1867 - - - (57—2—15,825.)	Trucks, wood, for axletrees, iron, transporting, 7-inch, 6½ ton	4	– 15 10½	3 – 8	– 9 5	4 5 11½	4 18 5½
24. 37. 94. 212. 365. 429—5.	10 April 1867 - - (57—Portsmouth—2569.) 1 July 1867. (57—2—15,825.) 14 October 1867. (57—2—16,344.)	Wadhooks, gun, with staves:						
		9-inch, 12 ton M. L. R. (15 in progress last year) -	24	7 19 5	11 11 3½	4 14 8	24 5 4½	27 16 1½
		8 „ 9 „ „ - - - - - - -	8					
		7 „ 6½ „ „ (15 in progress last year) -	23					
411—242; 411—243.	20 November 1867 - -	Wedges, iron:						
		Large - - - - - - - - - -	12	– 10 5	– 9 10	– 5 10	1 6 1	1 9 11
		Small - - - - - - - - - -	12	– 11 9	– 8 –	– 7 4	1 7 1	1 10 9
23. 26—3 -	6 September 1866 - (57—2—13,162.)	Wrenches, turret sight, 9-inch, 12 ton (shown in last year's B. S., in progress) - - - - - - - -	9	7 10 11	– 1 10¼	4 9 8	12 2 5¼	13 17 5¼
		Manufactures by Royal Laboratory:						
14—101 - -	23 March 1867 - - (57—Priddy'sHard—453.)	Cartridges:						
		Calico, bursters, for shell No. 4 - - - -	3,715	2 6 10½	6 – 7¼	1 7 10	9 15 3¾	11 3 8¾
14. 780—104 -	23 March 1867. (57—Priddy'sHard—453.) 12 March 1868.	Drill, B. L. R., leather - 7-inch, 11 lbs. - -	6	8 7 6½	7 2 5¾	4 19 7	20 9 7¼	23 9 3¼
		40 pounder, 5 lbs. -	16					
		20 „ 2½ „ -	6					
		12 „ 1½ „ -	58					
		9 „ 1⅛ „ -	55					
119. 550. 551—110.	4 May 1867. (57-Priddy'sHard—461.) 22 October 1867. (57—2—16,245.) 22 October 1867. (57—2—15,78 1	Flannel, empty, M. L. R.:						
		9-inch 43 lbs. - - -	2,666	18 9 9½	228 11 11¾	10 19 11	258 1 8¼	295 14 –¼
		9-inch 30 „ - - -	1,463					
		9-inch 15 „ - - -	125					
119. 550. 599.—111.	4 May 1867. (57—Priddy'sHard—461.) 22 October 1867. (57—2—16,245.)	Rifled - - - 8-inch 30 lbs. - - -	394	3 18 10	43 12 4½	2 6 8	49 17 10½	57 3 2½
		8-inch 20 „ - - -	586					
		8-inch 12 „ - - -	150					
119. 550. 551—112.	4 May 1867. (57—Priddy'sHard—461.) 22 October 1867. (57—2—16,245.) 22 October 1867. (57—2—15,781.)	7-inch 22 lbs. - - -	5,731	39 3 9½	392 5 4¾	23 5 11	454 15 1¼	521 1 1¼
		7-inch 14 „ - - -	6,033					
		7-inch 10 „ - - -	457					

668—117 - -	10 January 1867.	S. B. - - -	100-pounder, 20 lbs. -	500	1	6	7½	15	–	4½	–	16	–	17	3	–	19	13	1
41. 549—107 -	6 April 1867.		18 „ 1½ „ -	1,700	2	6	11	15	10	7	1	7	10	19	5	4	22	1	5
41. 248. 549—108.	22 October 1867.		9 „ 2 or 3 „ (500 of these were made from repairable of sorts, supplied from M. S. D.) -	2,160	1	19	1	16	13	6¼	1	3	3	19	15	10¼	22	13	5¼
	6 April 1867.		9-pounder, 1½ lbs. - -	1,000	1	1	–	10	1	9¼	–	12	6	11	15	3¼	13	9	7¼
	17 June 1867.		6 „ ¼ lb. - -	3,000	1	13	10	14	15	6	1	–	1	17	9	5	20	–	6
	23 October 1867.	Flannel, empty, B. L. R.	64-pounder, 8 lbs. (1,207 yards of serge, and 2,130 yards of braid supplied by M. S. D.) - -	4,000	16	14	6	2	2	8	9	18	7	28	15	9	32	19	8
549—116 -	23 October 1867.		7-inch, 11 lbs. - -	1,400	6	–	5	32	8	–	3	11	7	42	–	–	48	2	6
41—109- -	6 April 1867.		12 or 9-pounder, 1 lb. -	1,000	3	3	6	16	13	6¼	1	17	10	21	14	10¼	24	18	4¼
15—106 - -	23 March 1867. (57—Portsmouth—2543.)	Flannel, blue, for drill, filled with coal dust, 9-pounder		8	–	–	10	–	2	–	–	–	6	–	3	4	–	3	10
7—105 - -	27 February 1867 - -	„ „ „ „ 32 „		12	–	2	2	–	10	11	–	1	3	–	14	4	–	16	6
549—115 -	23 October 1867.	„ „ „ „ 24 „		10															
14—114 - -	23 March 1867 - - (57—Priddy's Hard—453.)	Bags:																	
14—103 - -	23 March 1867. (57—Priddy's Hard—453.)	Worsted shalloon, for blowing charges, 10-inch mortar (500 completed and 1,000 in progress) - - -		–	4	11	11½	5	15	5¾	2	14	7	13	2	-¼	15	–	3¼
14—102 - -	23 March 1867 - - (57—Priddy's Hard—453.)	Serge, blue, to hold 15 blank cartridges - - -		250	–	5	1½	1	15	11½	–	2	11	2	4	–	2	10	5
14—100 - -	23 March 1867. (57—Priddy's Hard—453.)	Cartridges, small arm:																	
25—151 - -	4 April 1867 - - (87—General No.—105.)	Ball, carbine, Terry - - - - - - - -		200,731	107	6	-¾	312	2	3½	63	14	7	483	2	11¼	553	11	9¼
25—150 - -	4 April 1867. (87—General No.—105.)	„ „ rifled, Paget, 1¾ drams - - -		6,030	1	3	10	11	7	5¼	–	14	3	13	5	6¼	15	4	1¼
25—152 - -	4 March 1867. (87—General No.—105.)	Spherical bore, S. B. C. B. ball, 2½ drams - - -		5,030	–	18	–	7	4	4¼	–	10	9	8	13	1¼	9	18	5¼
183—154 -	28 May 1867. (57—Priddy's Hard—465.)	Artillery, carbine rifled, ball, 2 drams - - -		1,001,515	209	17	10	1,755	16	8	124	13	1	2,090	7	7	2,395	2	10
25. 172—160 -	4 April 1867. (87—General No.—105.)	Blank, all arms - - - - - - - -		2,000,000	169	14	9	957	15	10	100	17	7	1,228	8	2	1,407	11	9
	21 May 1867. (57—Woolwich—7244.)																		
119—113 -	4 May 1867 - - - (57—Priddy's Hard—461.)	Wads, for 8-inch S. B. cartridges, coal dust - - -		6,000	31	3	4½	116	18	4	18	10	3	166	11	11½	190	17	9½
64—205 - -	15 April 1867 - -	Wrappers, paper, for artillery carbine, ball cartridge (made from scrap paper) - - - - - - -		198	–	–	3	-		-	–	–	2	–	–	5	–	–	6
		TOTAL of Statement (C.) - - - £.			1,917	9	5½	5,414	11	7¾	1,138	19	2	8,471	–	3¼	9,706	2	4¼

(Examined) *James C. Hurst*,
Accountant, and Auditor to Manufacturing Departments.

G. Fraser, Superintendent.

No. 7.—Royal Ordnance Factories, Portsmouth—*continued.*

STATEMENT (D.)—CONVERSIONS AND ALTERATIONS.

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Number.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		Conversions.		£. s. d.	£. s. d.	£. s. d.	£. s. d	£. s. d.
49. 150. 432. 565—452.	21 May 1867 - - - (57—2—15,441.)	Converting eleven 32-pounders to 64-pounder sliding carriages, including the manufacture of elevating screws, rollers, compressor plates, and levers complete, of which eight were also repaired.	11	194 15 3½	95 16 11¾	115 13 6	406 5 9¼	465 10 5¼
59. 118. 361. 385. 432—451.	1 May 1867 - - - (57—2—15,409.) 11 October 1867. (54—Marines—2784.) 2 December 1867.	Converting twenty-four 32-pounders to 64-pounder common carriages, including the manufacture of coins, trucks, elevating screws, linch pins, &c., of which twenty were also repaired.	24	176 17 11½	135 14 3½	105 1 6	417 13 9	478 11 8
423—462 -	23 November 1867 - -	Converting one 8-inch and one 32-pounder carriage to suit the 64-pounder Palliser guns, including the manufacture of two elevating screws, two rear axle and depressing chocks fitted with metal bushes at an angle to receive the elevating screws; also making two hand coins and linch pins, and repairing and altering the carriage to proper height.	2	11 19 9½	7 19 1	7 2 7	27 1 5½	31 – 4½
50—455 - -	11 February 1867 - - (57—19—5428.)	Converting a 32-pounder 25-cwt. sliding carriage to take a 20-pounder 15-cwt. B. L. gun, and completing it with compressor and elevating screws.	1	6 1 1½	3 12 10¼	3 11 11	13 5 10¾	15 4 8¾
450. 543—463 -	13 December 1867 - - (57—2—16,801.) 5 February 1868. (57—2—17,135.)	Converting six carriages to 20-pounder B. L. top, boat-service, with self-acting compressor; beds and coins complete.	6	24 2 –	9 12 8½	14 6 5	48 1 1½	55 – 10½
137. 156. 299—456 & 460.	12 May 1867 - - - (57—2—15,531.) 24 May 1867. (57—Portsmouth—2690)	Converting sixty-nine carriages to 12 and 9-pounders, top and under, with self-acting compressors; beds and coins complete.	–	439 11 6	148 15 11½	261 1 11	849 9 4½	973 6 4½
148. 362—457.	20 May 1867 - - - (57—2—15,464.) 14 October 1867. (57—2—16,344.)	Converting one hundred and twenty 32-pounder caps, spunge, to 64-pounders.	120	1 3 8	– 13 1½	– 14 –	2 10 9½	2 18 3½
148. 362—458.	20 May 1867 - - - (57—2—15,464.) 14 October 1867. (57—2—16,344.)	Converting one hundred and seventy-three 32-pounder rammers, with staves, to 64 pounders.	173	6 7 3½	– 6 6	3 15 7	10 9 4½	11 19 10½

148. 362—459.	20 May 1867 - - - (57—2—15,464) 14 October 1867. (57—2—16,344.)	Converting one hundred and forty-seven 32-pounder wadhooks, with staves, to 64-pounders.	147	3 7 7	1 9 4	2 – 1	6 17 –	7 17 1
501. 580—149.	3 October 1867 - -	Converting 1,290 empty flannel cartridges from repairable of sorts, viz.: 32-pounder gun, 3lbs. - - 1,000; 10-inch howitzer, 7lbs. - - 290	–	1 16 2	- -	1 1 6	2 17 8	3 6 3
		ALTERATIONS.						
396—547 -	9 November 1867 - -	Altering to pattern 550 iron-pointed levers, by turning down the end so as to suit the sockets of roller eccentrics, and elevating drum heads.	–	27 4 8½	3 1 10¼	16 3 10	46 10 4¾	53 6 –¾
396. 413—548.	9 November 1867 - - 19 " "	Altering six 8-inch and thirty-eight 7-inch iron trippers, by welding on the top end a piece of steel, to more effectually throw the compressing lever, also boring hole to receive lanyards.	–	5 11 8	– 18 1	3 7 6	9 17 3	11 5 11
3. 7. 18. 46. 299. 440—532.	4 August 1867 - - 5 December 1867.	Altering to latest pattern, and repairing the undermentioned facing implements, including the forging, boring, facing, and finishing the blocks; making and fitting steel cutters for the blocks; moulding, casting, turning, and finishing expanding bushes; repairing and stamping blocks, levers, and guides; making, shaping, and polishing mahogany guard boards, and finishing each set complete, viz.: 7-inch - - - - - 10 sets.; 40-pounder - - - - 8 "; 20-pounder - - - - 7 "; 12-pounder - - - - 7 "; 6-pounder - - - - 2 "	–	93 17 8	13 15 9¼	55 17 7	163 11 –¼	187 8 5¼
		TOTAL of Statement (D.) - - - £.		992 16 5	421 16 6½	589 17 11	2,004 10 10½	2,296 16 4½

Examined, *James C. Hurst*,
Accountant, and Auditor to the Manufacturing Departments.

G. Fraser,
Superintendent.

No. 7.—Royal Ordnance Factories, Portsmouth—*continued.*

STATEMENT (E.)—REPAIRS, &c.

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Number	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		Repairs, &c.:		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
530	11 April 1863 - - - (75—Devonport—150.)	Repairs to Carriages, Slides, and Limbers -	—	1,148 17 1¾	490 12 11½	682 6 10	2,321 16 11¼	2,660 7 1¼
		Carriages, Gun, Sliding:						
		Iron, M. L. R - - - 8-inch - -	8	—	—	—	—	—
		Iron, M. L. R - - - 7 „ - -	58	—	—	—	—	—
		Wood - M. L. R. - - 7 „ - -	20	—	—	—	—	—
		Wood - M. L. R. - - 64-pr. 64 cwt.	2	—	—	—	—	—
		Wood - B. L. R. - - 7-in. - -	14	—	—	—	—	—
		Wood - B. L. R. - - 40 pr. - -	21	—	—	—	—	—
		Wood - S. B. - - 68 „ 95 cwt.	1	—	—	—	—	—
		Carriages, Gun, Wood:						
		Common S. B. - - - 8-inch, 65 cwt.	10	—	—	—	—	—
		Common S. B. - - - 64-pr. 64 „	11	—	—	—	—	—
		Common S. B. - - - 32 „ 58 „	17	—	—	—	—	—
		Common S. B. - - - 32 „ 32 „	3	—	—	—	—	—
		Rear Chock - S. B. - - - 10-inch - -	28	—	—	—	—	—
		Rear Chock - S. B. - - - 68-pr. 95 cwt.	1	—	—	—	—	—
		Rear Chock - B. L. R. - - 24-pr. - -	2	—	—	—	—	—
		Rear Chock - B. L. R. - - 20 „ - -	6	—	—	—	—	—
		Rear Chock - B. L. R. - - 12 „ - -	2	—	—	—	—	—
		Field, Marine, Rifled, without Limbers - - - - 20-pr. - -	1	—	—	—	—	—
		Field, Marine, Rifled, without Limbers - - - - 12 „ - -	31	—	—	—	—	—
		Field, Marine, Rifled, without Limbers - - - - 6 „ - -	1	—	—	—	—	—
		Carriages, Boat Service:						
		Guns - Rifled - 12-pr. Top - -	25	—	—	—	—	—
		Guns - Rifled - 12-pr. Under - -	1	—	—	—	—	—
		Guns - Rifled - 9 „ Top - -	9	—	—	—	—	—
		Guns - S. B. 6-pounder - Top - -	14	—	—	—	—	—
		Guns - S. B. 6-pounder - Under - -	15	—	—	—	—	—
		Howitzer, 12-pounder - - Top - -	4	—	—	—	—	—
		Howitzer, 12-pounder - - Under - -	4	—	—	—	—	—

			Slides:						
			Pivotting — Iron, M. L. R. — 8-inch	6	—	—	—	—	—
			Pivotting — Iron, M. L. R. — 7 "	24	—	—	—	—	—
			Pivotting — Wood — M. L. R. — 7 "	10	—	—	—	—	—
			Pivotting — Wood — M. L. R. — 64-pr. 64 cwt.	10	—	—	—	—	—
			Pivotting — Wood — B. L. R. — 40 "	5	—	—	—	—	—
			Pivotting — Wood — S. B. — 68 " 95 cwt.	1	—	—	—	—	—
			Pivotting — Wood — S. B. — 32 " 25 cwt.	1	—	—	—	—	—
			Boat Service, B. L. R — 20-pounder	2	—	—	—	—	—
			Boat Service, B. L. R — 12 "	23	—	—	—	—	—
			Boat Service, B. L. R — 9 "	8	—	—	—	—	—
			Limbers, Field Marine — 20-pounder	2	—	—	—	—	—
			Limbers, Field Marine — 12 "	20	—	—	—	—	—
			Limbers, Field Marine — 6 "	1	—	—	—	—	—
			Miscellaneous Stores	—	1,585 — 8½	653 1 11¾	941 8 5	3,179 11 1¼	3,643 1 1¼
522	11 April 1863 (75—Devonport—150.)		Adapters, fuze, E.	235	—	—	—	—	—
			Aprons, slot	5	—	—	—	—	—
			Axes — Boarding	58	—	—	—	—	—
			Axes — Pick	75	—	—	—	—	—
			Axletrees, iron, transporting	82	—	—	—	—	—
			Bags, of sorts	2,779	—	—	—	—	—
			Barrels — Bung head	26	—	—	—	—	—
			Barrels — Cartridge — Half	211	—	—	—	—	—
			Barrels — Cartridge — Quarter	3,698	—	—	—	—	—
			Barrels — Common	9,157	—	—	—	—	—
			Barrels — Gun Ammunition — Metal-lined	10	—	—	—	—	—
			Barrels — Gun Ammunition — Round lids	24	—	—	—	—	—
			Barrels — Gun Ammunition — Square lids	558	—	—	—	—	—
			Barrels — Improved	376	—	—	—	—	—
			Barrels — Metal-lined — Whole	37	—	—	—	—	—
			Barrels — Metal-lined — Half	17	—	—	—	—	—
			Barrels — Metal-lined — Quarter	1	—	—	—	—	—
			Barrels — Wood, budge	5	—	—	—	—	—
			Barrows, of sorts	19	—	—	—	—	—
			Bearers, shot and shell	63	—	—	—	—	—
			Beds, of sorts	190	—	—	—	—	—
			Bolts	5	—	—	—	—	—
			Borers, copper	4	—	—	—	—	—
			Bouches, copper, vent-piece	1	—	—	—	—	—
			Boxes — Ammunition	436	—	—	—	—	—
			Boxes — Cartridge	7	—	—	—	—	—
			Boxes — Special tools	6	—	—	—	—	—
			Boxes — Tube	217	—	—	—	—	—

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (E.) Repairs—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Number.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
				£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
		Miscellaneous Stores—*continued.*						
22 - - (*continued.*)	11 April 1863 - - - (*continued.*)	Bottoms, wood, for shell - - - - - -	102	—	—	—	—	—
		Buckets, water - - - - - - - -	9	—	—	—	—	—
		Buoys - Night life - - - - - - -	14	—	—	—	—	—
		Buoys - „ apparatus - - - -	332	—	—	—	—	—
		Bushes, breech - - - - - - - -	7	—	—	—	—	—
		Callipers, brass - - - - - - - -	4	—	—	—	—	—
		Caps, percussion - - - - - - - -	3,386,215	—	—	—	—	—
		Cases - Brass - Half - - - - -	152	—	—	—	—	—
		Cases - Brass - Whole - - - - -	2,664	—	—	—	—	—
		Cases - Brass - Corrugated - - - -	120	—	—	—	—	—
		Cases - „ large, plain - - - - -	65	—	—	—	—	—
		Cases - „ rectangular - - - - -	1,443	—	—	—	—	—
		Cases - Calliper - - - - - - -	5	—	—	—	—	—
		Cases - Dell's - Hexagon, whole - - -	507	—	—	—	—	—
		Cases - Dell's - Pentagon - Whole - -	1,143	—	—	—	—	—
		Cases - Dell's - Pentagon - Half - -	14	—	—	—	—	—
		Cases - Dell's - Sectional sides - - -	9	—	—	—	—	—
		Cases - Implements, facing - - - -	26	—	—	—	—	—
		Cases - Metal-lined - Whole - - -	818	—	—	—	—	—
		Cases - Metal-lined - Half - - - -	1,675	—	—	—	—	—
		Cases - Metal-lined - Quarter - - -	880	—	—	—	—	—
		Cases - Powder, of sorts - - - - -	930	—	—	—	—	—
		Cases - Packing - - - - - - -	289	—	—	—	—	—
		Cases - Quadrant - - - - - - -	8	—	—	—	—	—
		Cases - Straight edge - - - - -	3	—	—	—	—	—
		Cases - Tin, for Bickford's fuze - - - -	6	—	—	—	—	—
		Chisels, tampeon - - - - - - - -	19	—	—	—	—	—
		Chocks, wood, dismounting gun - - - -	16	—	—	—	—	—
		Coins, wood, sorts - - - - - - -	330	—	—	—	—	—
		Collars, metal - - - - - - - -	2	—	—	—	—	—
		Compasses, spring, pairs - - - - - -	1	—	—	—	—	—
		Crows, iron, 5 feet - - - - - - -	3	—	—	—	—	—
		Cups, tin, 7-inch - - - - - - -	32	—	—	—	—	—
		Cylinders, of sorts - - - - - - -	7,736	—	—	—	—	—
		Extractors, tin cup - - - - - - -	34	—	—	—	—	—
		Flaps, metal - - - - - - - -	39	—	—	—	—	—
		Fids, wood - - - - - - - - -	10	—	—	—	—	—

Formers, wad	5	—	—	—	—	—
Funnels, of sorts	24	—	—	—	—	—
Fuzes, of sorts	5,422	—	—	—	—	—
Gauges, of sorts	209	—	—	—	—	—
Handles, for lights	159	—	—	—	—	—
Hammers, of sorts	5	—	—	—	—	—
Handscrews, double	3	—	—	—	—	—
Handspikes, of sorts	274	—	—	—	—	—
Heads, rammer	2	—	—	—	—	—
Helves, sorts	22	—	—	—	—	—
Hides, tanned	29	—	—	—	—	—
Holders, for swivel guns	4	—	—	—	—	—
Hoops, copper	20	—	—	—	—	—
Implements – Fuze and shell	994	—	—	—	—	—
Implements – Rocket – Machines	50	—	—	—	—	—
Implements – Rocket – Screens	30	—	—	—	—	—
Instruments, extracting projectiles	2	—	—	—	—	—
Irons, priming	16	—	—	—	—	—
Keys, of sorts	117	—	—	—	—	—
Ladders, scaling	2	—	—	—	—	—
Lanyards	39	—	—	—	—	—
Levers, of sorts	95	—	—	—	—	—
Lights, long	107	—	—	—	—	—
Links, iron, with thimbles	8	—	—	—	—	—
Linstocks, with cocks	31	—	—	—	—	—
Locks, pad, brass	5	—	—	—	—	—
Loops, dismounting, chocks	20	—	—	—	—	—
Lubricators	32	—	—	—	—	—
Magazines, boat service, N. P.	60	—	—	—	—	—
Mallets, tampeon	1	—	—	—	—	—
Measures, copper	31	—	—	—	—	—
Pendulums, brass	6	—	—	—	—	—
Plates, guide, for lanyards	259	—	—	—	—	—
Platforms, 9-inch, 12-ton	1	—	—	—	—	—
Pieces, vent	71	—	—	—	—	—
Pins – Friction	21	—	—	—	—	—
Pins – Keep	39	—	—	—	—	—
Pins – Linch	1,531	—	—	—	—	—
Plugs, for shells	9,210	—	—	—	—	—
Quadrants, brass	13	—	—	—	—	—
Rammers, of sorts	1,375	—	—	—	—	—
Rings, tappet	1	—	—	—	—	—
Rockets, signal	96	—	—	—	—	—
Rollers, metal	36	—	—	—	—	—
Saws, hand	1	—	—	—	—	—
Scrapers, shell	8	—	—	—	—	—
Screws, of sorts	1,085	—	—	—	—	—
Shackles, iron	312	—	—	—	—	—

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (E.)-Repairs—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Number.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
		Miscellaneous Stores—*continued.*		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
522 - - (*continued.*)	11 April 1863 - - (*continued.*)	Shoes, drag - - - - - - - - -	5	—	—	—	—	—
		Shovels - - - - - - - - -	6	—	—	—	—	—
		Sights, of sorts - - - - - - -	517	—	—	—	—	—
		Spades, common - - - - - - -	27	—	—	—	—	—
		Spanners, iron - - - - - - -	2	—	—	—	—	—
		Spikes - - - - - - - - -	19	—	—	—	—	—
		Spunges, of sorts - - - - - - -	301	—	—	—	—	—
		Staves - - - - - - - - -	26	—	—	—	—	—
		Sticks, portfire - - - - - - -	101	—	—	—	—	—
		Straight edge - - - - - - - -	1	—	—	—	—	—
		Tampeons, wood, sorts - - - - - - -	824	—	—	—	—	—
		Tackles, luff - - - - - - - -	4	—	—	—	—	—
		Tongs, sorts - - - - - - - -	20	—	—	—	—	—
		Tools, special, sets - - - - - -	12	—	—	—	—	—
		Trucks, of sorts - - - - - - -	321	—	—	—	—	—
		Tubes, quill, detonating - - - - -	17,618	—	—	—	—	—
		Wadhooks, of sorts - - - - - - -	2,094	—	—	—	—	—
		Wadmiltilts - - - - - - - -	22	—	—	—	—	—
		Wads, coal dust - - - - - - -	2	—	—	—	—	—
		Washers, of sorts - - - - - - -	459	—	—	—	—	—
		Weights, iron - - - - - - - -	1	—	—	—	—	—
		Wheels, of sorts - - - - - - -	45	—	—	—	—	—
		Wrenches, of sorts - - - - - - -	73	—	—	—	—	—
519 - -	11 April 1863 - - (75—Devonport—150.)	Repairing shot and shell, and altering them, when required, to service pattern, by re-bushing them, fitting them with papier mâché wads, and preparing them for naval bottoms; including the casting, turning, and screwing of bushes; casting, cutting, and milling of rivets; cutting and turning of bottoms; cleaning, painting, and fixing the whole ready for issue.	39,121	320 12 6	94 1 6¼	190 8 6	605 2 6¼	693 6 11¼
525 - -	11 April 1863 - - (75—Devonport—150.)	Repairing, painting, and marking boxes, shot and shell.	3,377	114 5 6¾	45 18 5¼	67 17 6	228 1 6	261 6 5
520 - -	11 April 1863 - - (75—Devonport—150.)	Cleaning, gauging, and painting smooth-bore projectiles in charge of the Military Store Department.	937	19 8 11¼	- 2 1	11 11 -	31 2 -¼	35 12 7¼

521	11 April 1863 - - (75—Devonport—150.)	Cleaning, gauging, and painting rifled projectiles in charge of the Military Store Department.	21,165	144 5 4½	24 19 10½	85 13 6	254 18 9	292 2 2
518	11 April 1863 - - (75 Devonport—150.)	Fitting the undermentioned Ordnance for receiving studs for quill friction tubes, also enlarging their vents, viz.:	–	36 7 10	– 13 11¼	21 12 9	58 14 6½	67 5 10¼
		Ordnance:						
		M. L. R. 9-inch - -	9	—	—	—	—	—
		M. L. R. 8 „ - - -	6	—	—	—	—	—
		M. L. R. 7 „ - - -	14	—	—	—	—	—
		Iron Gun 10-inch, 86 cwt. -	10	—	—	—	—	—
		Iron Gun 8 „ 65 „ -	177	—	—	—	—	—
		Iron Gun 68-pr. 95 „ -	109	—	—	—	—	—
		S. B. 32-pr. 58 „ -	15	—	—	—	—	—
		S. B. 32-pr. 56 „ -	94	—	—	—	—	—
		S. B. 32-pr. 50 „ -	25	—	—	—	—	—
		S. B. 32-pr. 48 „ -	1	—	—	—	—	—
		S. B. 32-pr. 45 „ -	28	—	—	—	—	—
		S. B. 32-pr. 42 „ -	14	—	—	—	—	—
		S. B. 32-pr. 32 „ -	40	—	—	—	—	—
		S. B. 32-pr. 25 „ -	25	—	—	—	—	—
		S. B. 18-pr. 15 „ -	2	—	—	—	—	—
		S. B. 9 „ 28 „ -	5	—	—	—	—	—
		S. B. 6 „ - - -	23	—	—	—	—	—
		Brass Howitzer 24 „ - - -	22	—	—	—	—	—
		Brass Howitzer 12 „ - - -	10	—	—	—	—	—
516 - -	11 April 1863 - - (75—Devonport—150.)	Sighting the undermentioned Ordnance, viz.:						
		Ordnance;						
		Iron Guns 10-inch, 86 cwt. - - -	10					
		Iron Guns 8 „ 65 „ - - -	80					
		Iron Guns 32-pr. 63 „ - - -	4	24 1 4½	1 2 8	14 5 11	39 9 11½	45 5 1½
		Iron Guns 32-pr. 42 „ - - -	23					
		Iron Guns 32-pr. 25 „ - - -	1					
		Brass Howitzers, 24-pr. - - - -	6					
	11 April 1863 - - (75—Devonport—150.)	Repairing the undermentioned Ordnance, including the altering of sights to new pattern moveable clamp sockets, repairing fittings, fitting for friction pins, and cutting a vertical notch on the horizontal axis line on the side of the breech:						
504 - -	- - - -	7-inch, 6½-ton, M. L. R. - - - - -	1	2 11 10	– 14 7	1 10 10	4 17 3	5 11 6
508 - -	- - - -	7-inch, B. L. R. - - - - - - -	23	31 7 7½	5 3 11¼	18 13 –	55 4 6¾	63 5 8¾

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (E.)—Repairs—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Number.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
	11 April 1863—*continued.*	Repairing the undermentioned Ordnance, &c.—*contd.*		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
509		40-pounder, B. L. R.	2	3 8 11½	– 8 9¼	2 – 11	5 18 7¾	6 15 11¾
511		12-pounder, B. L. R.	1	1 7 1	– 2 2¼	– 16 –	2 5 3¼	2 11 10¼
506		100-pounder, 6½-ton, S. B.	3	4 12 1	1 – 2½	2 14 7	8 6 10½	9 11 3½
536	11 April 1863 (75—Devonport—150.)	Repairing bursters, of sorts	1,806	11 8 8	– 6 1	6 15 11	18 10 8	21 4 8
		Cost of rectifying and marking filled and empty Cannon Cartridges, viz.:						
		Cartridges:						
544	11 April 1863 (75—Devonport—150.)	Filled - S. B. 100-pounder, 25 lbs.	100	1 8 5¼	– 14 5¼	– 16 10	2 19 8½	3 8 4½
		Filled - B.L.R. 7-inch, 11 „	313					
		Filled - B.L.R. 20-pounder, 2½ „	84					
546	11 April 1863 (75—Devonport—150.)	Empty - S. B. 8-inch 10 „	3,490	2 15 6	1 10 5½	1 12 10	5 8 9½	6 16 –½
		Empty - S. B. 8-inch 8 „	15,674					
		Empty - S. B. 8-inch 5 „	6,078					
		Empty - S. B. 68-pr. 16 „	70					
		Empty - B. L. R. 40-pr. 5 „	2,431					
537	11 April 1863 (75—Devonport—150.)	Cost of breaking up and destroying the following unserviceable Ammunition, viz.:						
		Cartridges: Calico Bursters	2,128	29 2 4	– 2 11	17 6 –	46 11 3	53 6 11
		Cartridges: Flannel, Gun	8,853					
		Cartridges: Small Arm - Ball	354,378					
		Cartridges: Small Arm - Blank	39,545					
534	11 April 1863 (75—Devonport—150.)	Cost of filling and packing the following Cannon Cartridges, and Bursters, including the transporting to and from the Magazine Buildings:	–	125 18 8¾	26 3 11	74 15 11	226 18 6¾	260 – 2¾
		Cartridges, Flannel, Gun:						
		M. L. R. 9-inch - 43 lbs.	1,422	—	—	—	—	—
		M. L. R. 9-inch - 30 „	1,182	—	—	—	—	—
		M. L. R. 9-inch - 15 „	277	—	—	—	—	—
		M. L. R. 8-inch - 30 „	400	—	—	—	—	—
		M. L. R. 8-inch - 20 „	202	—	—	—	—	—
		M. L. R. 8-inch - 12 „	121	—	—	—	—	—
		M. L. R. 7-inch - 22 „	3,870	—	—	—	—	—
		M. L. R. 7-inch - 14 „	3,168	—	—	—	—	—
		M. L. R. 7-inch - 10 „	985	—	—	—	—	—
		M. L. R. 64-pounder - 8 „	300	—	—	—	—	—

B. L. R.	7-inch	11 lbs.	1,395	—	—	—	—	—	—
		10 „	22	—	—	—	—	—	—
	64-pounder	8 „	4,000	—	—	—	—	—	—
	40-pounder	5 „	7,010	—	—	—	—	—	—
	20-pounder	2½ „	265	—	—	—	—	—	—
	12-pounder	1½ „	3,315	—	—	—	—	—	—
	12 or 9-pounder	1 „	1,200	—	—	—	—	—	—
	9-pounder	1⅛ „	500	—	—	—	—	—	—
S. B.	10-inch	8 „	427	—	—	—	—	—	—
	8-inch	5 „	2,856	—	—	—	—	—	—
		8 „	8,918	—	—	—	—	—	—
	100-pounder	20 „	600	—	—	—	—	—	—
	68-pounder	8 „	1,030	—	—	—	—	—	—
	32-pounder	4 „	1,611	—	—	—	—	—	—
		3 „	755	—	—	—	—	—	—
		2½ „	88	—	—	—	—	—	—
	18-pounder	2 „	400	—	—	—	—	—	—
		1½ „	1,470	—	—	—	—	—	—
	12-pounder	4 „	112	—	—	—	—	—	—
		3 „	1,500	—	—	—	—	—	—
	9-pounder	3 „	460	—	—	—	—	—	—
		2 „	1,060	—	—	—	—	—	—
		1½ „	560	—	—	—	—	—	—
	6-pounder	2 „	655	—	—	—	—	—	—
		1½ „	216	—	—	—	—	—	—
		1 „	2,682	—	—	—	—	—	—
		¼ „	3,000	—	—	—	—	—	—
Howitzer	10-inch	7 „	290	—	—	—	—	—	—
	12-pounder	1¼ „	1,200	—	—	—	—	—	—
		1 „	120	—	—	—	—	—	—
	24-pounder	2½ „	1,600	—	—	—	—	—	—
Cartridges, Calico Bursters:									
B. L. R.	12-pounder	½ lbs.	36	—	—	—	—	—	—
Diaphragm Shrapnel	8-inch	80 drams	6,561	—	—	—	—	—	—
	32-pounder	50 „	160	—	—	—	—	—	—

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (E.)—Repairs—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Number.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
				£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
535 - -	11 April 1863 - - (75—Devonport—150.)	Cost of repairing the undermentioned ammunition:	–	13 18 3¾	4 5 5½	8 5 4	26 9 1¼	30 6 3½
		Cartridges, Flannel, Gun:						
		B. L. R. - - - 7-inch - 12 lbs.	600	—	—	—	—	—
		B. L. R. - - - 7-inch - 11 „	539	—	—	—	—	—
		B. L. R. - - - 40-pr. 5 „	246	—	—	—	—	—
		B. L. R. - - - 20 „ 2½ „	12	—	—	—	—	—
		S. B. - - - - 8-inch 5 „	21	—	—	—	—	—
		Cartridges, Small Arm:						
		Ball - - - - - - - -	57,850	—	—	—	—	—
		Blank - - - - - - - -	10,975	—	—	—	—	—
528 - -	11 April 1863 - - (75—Devonport—150.)	Cost of examining rifled and smooth-bore ordnance mounted on H.M.'s forts, batteries, and vessels, or on being received on, or issued off, the charge of the Military Store Department.	–	109 6 9½	7 8 5	81 12 11	198 8 1½	227 6 10½
527 - -	11 April 1863 - - (75—Devonport—150.)	Cost of selecting and packing cannon and small arm cartridges, combustible stores, and their appurtenances, previous to their issue to service.	–	136 14 10¼	31 3 3¼	81 4 6	249 2 7½	285 8 10½
529 - -	11 April 1863 - - (75—Devonport—150.)	Cost of examining miscellaneous stores returned to the Military Store Department, and reporting their condition.	–	238 2 11	15 2 4¼	141 17 7	395 2 10¼	452 14 7¼
531 - -	11 April 1863 - - (75—Devonport—150.)	Cost of painting and marking boxes and cases of sorts previous to issue.	–	28 7 7½	6 1 6	16 17 3	51 6 4½	58 16 1½
538 - -	11 April 1863 - - (75—Devonport—150.)	Cost of filling, rectifying, and marking shell, including the packing, unloading, and loading from the Military Store vessels.	–	77 – 11	1 8 6¼	45 12 5	124 1 10¼	142 7 10¼
545 - -	11 April 1863 - - (75—Devonport—150.)	Cost of emptying shell - - - - - -	–	7 19 6½	- -	4 15 –	12 14 6½	14 11 8½
		Total Repairs - - - £.		4,218 11 7¾	1,412 10 5¾	2,522 12 3	8,153 14 4½	9,342 12 2½

Examined, *James C. Hurst,*
Accountant, and Auditor to Manufacturing Departments.

G. Fraser,
Superintendent.

STATEMENT (F.)—MISCELLANEOUS SERVICES

STATEMENT (F.)—MISCELLANEOUS SERVICES.

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
		REPAIRS TO STEAM CRANES:					
42—523 -	15 January 1867 - -	Repairing a 10-ton steam crane by moulding and casting 24 fire-bars; also making a new ash-pan of plate and angle iron, including the punching and rivetting, fitting together, and fixing the same to the crane.	1 11 4½	- 12 5	- 18 7	3 2 4½	3 11 5½
506—523 -	15 January 1868 - -	Repairing a five-ton steam crane, including the forging, planing, boring, slotting, and cutting key ways; fitting one shaft and lever for the slew gear, removing the old shaft, and re fitting the new complete.	- 10 5	- 3 6½	- 6 1	1 - -½	1 2 11½
531—523 -	1 February 1868 - -	Repairing a five-ton steam crane, including the moulding, casting, turning, boring, and fitting of two metal bearings for lever clutch; adjusting four metal bearings to crank shaft and connecting rods; re-facing slide valve, making a stud, and boring and screwing four ½-inch bolts and nuts for fixing slide valve cover; chipping and filing the teeth of pinion on crank shaft, and putting the same deeper into gear; removing the cylinder covers, and adjusting the pistons of both engines; re jointing the cylinder covers and slide valve chest; re-facing the feed-pump and valves, and re-packing the stuffing boxes of piston rods, slide valve spindle and feed-pumps, and putting the whole together in working order.	2 13 11	- 5 11	1 12 -	4 11 10	5 5 2
		MISCELLANEOUS SERVICES FOR THE MILITARY STORE DEPARTMENT:					
4 R. L.—533 -	14 February 1867 - -	Repairing two water-casks, including five new hoops, three new staves, and painting the same with two coats of paint.	- 4 -	- 3 6¾	- 2 4	- 9 10¾	- 11 4¾
79 R. O. F.—533.	4 April 1867 - -	Repairing two sling boxes for shipping shot and shell, by making new woodwork complete for one, and new bottom, head and tail boards for the other; repairing 24 screw bolts and nuts, and 100 rivets for re-fixing the iron-work; also repairing a two-wheel truck, including 16 new spokes in wheels, new cross-bar to handle; repairing 30 screw bolts and nuts, re-fixing the whole, and painting complete.	6 18 5½	4 4 6¼	4 2 2	15 5 1¾	17 9 7¾

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (F.) Miscellaneous Services—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
27 R.L., and 84 R. O. F.	4 April 1867 - - -	Repairing the undermentioned stores during the quarter ended 30th June 1867, viz.: New soling and heeling one pair of water boots, and four pairs of magazine shoes, and heeling and strapping two pairs of magazine shoes; repairing two ammunition wagons, including two new felloes; forging and fitting one linch pin and washer, cutting and shrinking one tire, and repairing 12 screw bolts and nuts; making new lids to two kettles; repairing two railway trucks by casting and fitting six pairs of metal hinges, covering the top joints with leather, and fixing two stays to tops; repairing one padlock, one metal key, and forging and fitting new hinge and hook to a hook pot; repairing a boat, including the making of new bottom boards, one new thawt, four cleets for crutches, sawing out three feet of plank, 41 feet of ribbon pieces, making new mast spout, and forging four iron staples; repairing the stern branches, after gratings, and four sheets; forging a new piece to end of keelson band; repairing the rudder and mast; re-caulking and tarring the bottom; painting, graining, and varnishing the inside complete, including all copper fastenings; repairing a boat, including the manufacture of two new bilge pieces, welding new piece to keelson band, new keelson board, and seven wooden cleats, and fixing complete with copper fastenings.	23 12 -½	11 13 11	14 - 8	49 6 7½	56 10 5½
45 R. L.—159 R. O. F.—533.	8 April 1867 - - -	Repairing the military store vessel "Mary Anne," including the making of new hatch cover; forging a new piece of iron to stern band, and repairing the pump; altering the steering-gear and horse; re-caulking the deck and waterways, and tarring the bottom.	5 13 2	2 3 4½	3 7 2	11 3 8½	12 16 2½
142 R.O.F.—533.	17 May 1867 - -	Forging, welding, and fitting a new piece of iron to the handle of a cast iron roller.	- - 6	- - 4	- - 3	- 1 1	- 1 3
152 R. O. F—533.	2 May 1867 - - -	Repairing a four-wheel drug, including the moulding, casting, boring, and fitting of four iron wheels, making new ash axle bed, one new plate, one cross handle, two pillows for the top; forging and screwing ten bolts and nuts; and forging and fitting four linch pins for axles; also repairing a sling cart, including the making of a new pole with cross handle; and forging and screwing six bolts and nuts for fixing the same, repairing a cast-iron shoe and two wheels, re-fixing and re-painting.	3 5 7	1 5 11	1 19 -	6 10 6	7 9 7
162 R. O. F.—533.	29 May 1867 - -	Sawing 3-inch deals into 330 superficial feet - - - - - -	- 4 -½	- -	- 2 4	- 6 4½	- 7 4½

175 R. L.—167 R. O. F.—533.	22 June 1867 - - -	Repairing the skylights of the floating powder-magazine "Grampus," to prevent their leaking, by raising the combings, altering and repairing the gutters; taking out, repairing, and re-fixing 16 sashes, re-glazing the same with 16 panes of glass; repairing and re-hanging 10 shutters, and painting the whole complete, inside and out, with two coats of paint; including the conveyance of artificers and labourers to and from the ship in Fareham Creek.	7 18 4	10 5 11½	4 14 2	22 18 5½	26 3 4½	
197 R. L.—533	3 June 1867 - - -	Re-lining the hold of the military store vessel "Mary Ann," and re-covering the same with tanned hides with copper fastenings; (hides supplied by Military Store Department.)	– 13 6	– 6 –¾	– 7 11	1 7 5¾	1 11 5¾	
174 R. O. F.—533.	7 June 1867 - - -	Repairing a four wheel drug, including the moulding, casting, boring, and fitting of four iron wheels; making new ash handle with cross-bar, two new futchells, and four ash battens; forging and fitting four linch-pins, three iron plates, and one key and chain; forging and screwing five bolts and nuts; repairing 16 bolts and nuts, and fixing the whole complete; also repairing a two-wheel drug, including the turning of two wood wheels; making new cross-handle to pole, and forging and screwing two bolts and nuts for fixing same; repairing a shell cart, by making and fixing new cross-handle with four new rivets; repairing two iron stays, putting the whole in working order, and painting ready for use.	4 9 5½	1 7 7¾	2 13 1	8 10 2¼	9 15 –¼	
231 R. L.—533	12 June 1867 - - -	Repairing the doors of the entrance-ports of the floating powder magazine "Grampus," Fareham Creek.	1 7 –	– 6 6½	– 16 1	2 9 7½	2 16 11½	
257 R. L.—533	19 June 1867 - - -	Re-caulking and stopping 180 running feet of seams in the deck of the floating powder magazine "Grampus," and conveyance of artificers and labourers to and from the ship.	2 9 9	– 3 –	1 9 7	4 2 4	4 14 4	
287 R. L.—225 R. O. F.—533.	3 July 1867 - - -	Repairing the under-mentioned stores during the quarter ended 30th September 1867:—Repairing gig, by scraping and cleaning inside and outside, making new stretchers and stanchion, casting, turning, and finishing four metal crutches; repairing the fore and aft sheets and stern benches; re-caulking and tarring the bottom, painting the outside, and painting, graining, and varnishing the inside; repairing four railway trucks, including the making of two panels; casting and fitting three metal hinges, making two new tops, six new stays, and one new axle, and putting the whole together complete; repairing two single blocks, including the casting, turning and fitting of two metal sheaves; new soling nine pairs, and soling and heeling two pairs of magazine shoes; re-leathering three pairs of oars; repairing ammunition wagon, including the making of six felloes for wheels; forging and screwing 12 bolts and nuts; cutting and re-shutting two bands; repairing the canvas cover, and painting ready for use; repairing three hand transporting barrows by making one new side; moulding, casting, drilling, filing, and fitting three metal heads; forging and screwing six copper bolts and nuts; repairing six copper screw bolts and nuts; repairing six copper screw bolts, refixing and putting the whole in proper working order.	9 2 9¾	3 – 9¾	5 8 9	17 12 4½	20 3 7½	

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (F.) Miscellaneous Services—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
320 R. L.—533	12 July 1867 - - -	Repairing the mooring bollard of the Military Store vessel "Hardinge."	– 13 6	– 7 5	– 7 11	1 8 10	1 13 1
238 R. O. F.—533.	22 July 1867 - - -	Sawing nine deals into 172 superficial feet - - - - - -	– 1 6	- -	– – 10	– 2 4	– 2 8
287 R. O. F.—533.	14 August 1867 - -	Repairing four sling boxes for shipping shot and shell, including the making of woodwork complete for three, making new side and tail board for the other; forging 120 rivets, and forging and screwing 24 screw bolts and nuts, and painting complete.	11 16 3½	6 2 3½	7 – 6	24 19 –¾	28 11 9¾
320 R. O. F.—533.	5 September 1867 - -	Sawing six deals into 126 superficial feet - - - - - -	– – 10½	- -	– – 6	– 1 4½	– 1 6½
348 R. O. F.—533.	6 September 1867 - -	Repairing a two-wheel truck by making new ash pole with cross handle; forging and fitting iron stays and rivets for fixing the same; screwing and hardening up the bolts and nuts, and painting the same complete with two coats of paint.	– 18 1½	– 3 –	– 10 9	1 11 10½	1 16 7½
357 R. O. F.—533.	7 October 1867 - -	Cutting three deals into scantling 3-in. × 1½-in. - - - - -	– 1 7½	- -	– – 11	– 2 6½	– 2 11½
393 R. O. F.—533.	29 October 1867 - -	Repairing an anchor by forging new stock and head; also repairing a small hand engine by making new metal strainer and leather valve flap.	– 15 1	– – 6¾	– 8 11	1 4 6¾	1 8 1¾
374 R. L.—533	30 July 1867 - - -	Making a wooden lock for rudder, and fixing the same complete on board Her Majesty's vessel "Letitia."	– 6 –	– – 8¼	– 3 6	– 10 2¼	– 11 8¼
395 R L.—533	6 August 1867 - -	Repairing an accommodation ladder by making two handrails and two stanchions, two oak supports for platform, two rails and five brackets, fixing and painting the same complete; also enclosing the sleeping berths with match boarding, fitted with two sliding doors, fixing and painting on board the Floating Magazine "Grampus," Fareham Creek.	6 10 6	3 14 1¾	3 17 8	14 2 3¾	16 3 5¾
416 R. O. F.—533.	20 November 1867 - -	Repairing two boxes for shipping shot and shell, including the forging and boring of 16 iron plates; forging 150 rivets, one pin and chain for main bolt; forging and screwing four bolts and nuts, and fixing complete; repairing one box by making new end and side; repairing the iron work, and fitting complete; turning two elm fids for 13-in. mortars, and fitting them with rope handles; repairing a two-wheel hand truck by making two new sides, and two cross pieces; forging and screwing four bolts and nuts, and forging and fitting two linch pins and washers.	7 12 6	3 – 9½	4 10 7	15 3 10½	17 8 1½
417 R. O. F.—533.	20 November 1867 - -	Repairing 12 iron wedges used for breaking up unserviceable stores, by welding and laying on pieces of new iron.	– 9 3	– 1 6	– 5 6	– 16 3	– 18 7

427 R. O. F.—533.	29 November 1867 - -	Repairing a four-wheel drug, including the moulding, casting, boring, and fitting of four iron wheels; making new cross bars for top of drug; forging and screwing four bolts and nuts for fixing the same; forging and fitting four linch-pins and one iron stay; fixing and fitting complete.	3 4 7½	- 14 10	1 18 4	5 17 9½	6 15 -½
494 R. L.—533	1 October 1867 - -	Repairing the undermentioned stores during the quarter ended 31st December 1867, viz.:	4 13 9	3 - 2¾	2 15 7	10 9 6¾	12 - 1¾
		New soling four pairs, and heeling three pairs, of magazine shoes; repairing box for boat-cloak; repairing four single blocks, including the forging and fitting of four new copper pins; repairing two doors, by making three new stiles and one top rail, and scraping one door-frame; repairing three boats:					
		1st boat,—30 feet running of new planking, one new cleat, two stretchers, 44 feet of rubbing pieces; forging and fitting new keel band; re-coppering new mast plug, making two new bilge pieces, repairing the bottom boards and stern benches; altering and repairing rudder; re-fastening knees and cleats, all copper fastened; cleaning, caulking, and tarring, complete.					
		2nd boat,—15 feet of new planking, 30 feet of rubbing pieces; repairing the stem iron, bottom boards, thawts, fore and aft sheets, stern benches with copper fastenings; scraping, caulking, tarring, and painting, complete.					
		3rd boat,—One new transom trail in stern, two new knees, one keelson board; repairing the fore sheets and copper-fastening complete; repairing three pairs of oars with new leathers; one hook-pot new bottomed.					
		Repairing three ammunition wagons, including one pair of new ash shafts with iron fittings complete; six new felloes, and six spokes for wheels; cutting and re-shutting one tire, and forging and screwing four bolts and nuts for fixing the same; repairing split key and chains; forging and fitting one drag shoe; making and fixing new seat to driver's box; relining with canvas the tops and insides of two wagons; repairing the leather straps; screwing up and hardening all bolts and nuts, and painting ready for use.					
517 R. L.—533	11 October 1867 - -	Repairing the pump and gear of the Military Store vessel "Letitia," including new box, and repairing the iron work.	- 4 1½	- - 7	- 2 4	- 7 -½	- 8 1½
430 R. O. F.—533.	30 November 1867 - -	Repairing two magazine barrows, including the moulding, casting, boring, and fitting of two metal stays; forging and screwing four copper bolts and nuts; forging and fitting four copper linch-pins and washers; repairing four bolts and nuts; trimming off and painting complete.	1 - 10	- 16 -	- 12 4	2 9 2	2 16 6
431 R. O. F.—533.	2 December 1867 - -	Repairing a sling wagon for removing heavy ordnance, by boring, turning, and fitting wrought-iron sockets and brackets for ends of windlass; making new splinter bar; forging and screwing four bolts and nuts for securing the bar to the fore carriage; forging and fitting four iron plates and six rivets for the fore carriage; repairing the hind carriage by forging and fitting new cap-squares, four eye pins, four keys with chains; making ash cross bar; forging and screwing three bolts and nuts for fixing same; refixing and painting the whole complete.	17 15 9½	4 9 6½	10 11 -	32 16 4	37 12 1

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (F.) Miscellaneous Services—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
436 R. O. F.—533.	4 December 1867 -	Repairing a 2-wheel drug, by making new pole with cross bar, forging and screwing four bolts and nuts, and two iron clips for securing the same; repairing two iron stays, one prop, and four rivets; trimming off and painting.	– 8 –	– 8 10½	– 4 9	1 1 7½	1 4 9½
445 R. O. F.—533.	10 December 1867 -	Removing the span shackle of the bowsprit of the military store-vessel "Wellington," and forging, boring, and fitting a new shackle, covering it with leather, and fixing it complete.	1 14 2	– 6 3½	1 – 1	3 – 6½	3 9 4½
467 R. O. F.—533.	20 December 1867 -	Repairing a hand-cart for removing shot and shell by making and fitting new bottom; repairing the iron handle and prop stay; making new ash cross bar, and forging four rivets for fastening the same; also repairing a wadmiltilt.	– 12 6	– 17 5½	– 7 5	1 17 4½	2 2 10½
473 R. O. F.—533.	2 January 1868 - -	Sawing 50 deals into 7,608 lineal feet - - - - - - -	– 16 7	- -	– 9 10	1 6 5	1 9 10
499 R. O. F.—533.	13 January 1868 - -	Repairing the main beam or girders of the hold of the military store-vessel "Lord Panmure."	5 5 6½	1 11 –	3 2 8	9 19 2½	11 8 2½
502 R. O. F.—533.	14 January 1868 - -	Repairing a 4-wheel drug, including the moulding, casting, boring, and fitting of four iron wheels.	– 16 10	1 9 8	– 9 11	2 16 5	3 4 9
514 R. O. F.—533.	23 January 1868 - -	Sawing 20 deals into 7,680 lineal feet - - - - - - -	– 16 8½	- -	– 9 10	1 6 6½	1 9 11½
561 R. L.—533	30 October 1867 - -	Repairing the copper funnel of the military store-vessel "Hardinge."	– 4 –	– 1 1¾	– 2 4	– 7 5¾	– 8 7¾
613 R. L.—533	29 November 1867 -	Securing the hand-rail of an accommodation ladder by making and fixing two new spurs; also making and fixing a moveable hand-rail to a main-hold ladder, including the manufacture of two copper stays for securing and fitting the same on board floating powder-magazine "Grampus," Fareham Creek, including the conveyance of artificers and labourers to and from the vessel.	1 19 6	1 – 3¼	1 3 7	4 3 4¼	4 15 7¼
625 R. L.—533	10 December 1867 -	Re-covering with tanned hide the bolts and knees in the hold of the military store-vessel "Gorilla;" covering the keelson with 40 feet of deal boards, and the combings with sheet copper.	1 4 9	6 13 8	– 14 10	8 13 3	9 18 8
639 R. L.—533	19 December 1867 -	Making and fixing new spring and copper wire-pull to bell in magazine.	– 5 6	– 1 –	– 3 4	– 9 10	– 11 4

654 R.L. - 480 R.O.F. 533	4 January 1868 - -	Removing 12 scupper lights; making patterns, moulding, casting, boring, turning, screwing and fitting 12 metal plugs, 8 rods, 8 nuts, and 24 rivets; fitting and fixing the same together; recovering the plugs with fearnought and tallow, bound with copper wire, and fitting the whole complete on board the floating magazine "Grampus."	10 19 2	13 10 7¾	6 10 3	31 – –¾	35 10 5¾
551 R.O.F.— 533.	10 February 1868 - -	Sawing 20 deals into scantling 24′ × 11″ × 2″ - - - -	– 5 1	- - -	– 2 11	– 8 –	– 9 2
552 R.O.F.— 533.	13 February 1868 - -	Moulding, casting, and cleaning 34 lbs. of gun fittings for shell barrow in course of alteration by the Military Store Department, for submission to the O. S. Committee; material supplied by the M. S. Department.	– 3 6	- -	– 2 –	– 5 6	– 6 4
594 R.O.F.— 533.	7 March 1868 - -	Repairing the iron handle of a hand cart used for removing shot and shell, by making new ash cross bar, and repairing the iron work of pole, and fixing complete; repairing a four-wheel drug, by making new ash pole and handle; forging and screwing four bolts and nuts; forging one split key and chain, four rivets, and four linch-pins and washers; repairing 18 screw bolts and nuts, and fixing the whole complete; also adjusting a sling wagon, and fitting four ash levers to the same.	1 19 –	1 12 11¼	1 3 4	4 15 3¼	5 9 2¼
608 R.O.F.— 533.	17 March 1868 - -	Re-making a wrench for removing the breech screws of 7-in. B. L. guns.	– 7 1½	- -	– 4 1	– 11 2½	– 12 10½
655 R.L. - 481 R.O.F.— 533.	4 January 1868 - -	Making a cutlass-rack 8 feet long, fitted with 11 pegs; making a clothes rack 17 feet × 1″ × 4″; making 54 feet running of peg rails, including pegs, and fixing the whole complete, and painting with two coats of paint, on board floating powder magazine "Grampus."	2 5 7½	1 1 5	1 7 1	4 14 1½	5 7 10½
659 R.L. - 497 R.O.F.— 533.	7 January 1868 - -	Moulding, casting, and drilling an iron hawse pipe, and forging and fitting two bolts, removing the old pipe, and fixing the new on board Her Majesty's vessel "Hardinge"; also repairing the bulwarks.	1 3 9	– 1 10½	– 14 1	1 19 8½	2 5 6½
660 R.L.—533	7 January 1868 - -	Repairing the undermentioned stores during the quarter ended 31st March 1868, viz.:— Soling and heeling one pair of water boots; repairing 13 iron powder cylinders by hammering out all the dents, japanning the inside, and painting the outside, and making nine new leather washers; forging and screwing five new bolts; soling and heeling seven pairs, and soling three pairs of magazine shoes; forging and fitting new bottom to an ammunition wagon with a drag shoe; repairing two ammunition wagons by making two new felloes, 12 spokes; cutting and re-shutting the tire of wheel; forging and screwing eight bolts and nuts; re-nailing the canvas covers, and fastening the hooks of three ammunition wagons. Repairing six railway wagons, viz.:— 1st. One new panel, new top complete with stops, and painting and varnishing complete. 2nd. Casting and fitting two metal hinges, new leather to top joint, and fitting stops to the top; making two new panels for end, and painting and varnishing complete. 3rd. Making one pair of new doors and one top, casting and fitting two small hinges, and painting and varnishing complete. 4th. Repairing two doors and panels, fitting top with stops, casting and fitting one metal hinge, and painting and varnishing. 5th. Casting and fitting three hinges; new leather to top joint, and fitted with stops; painted and varnished. 6th. Casting and fitting three hinges and one metal bar, making new end, fitting top with stops, and new leather to top joints, and painting and varnishing complete.	5 8 7½	2 8 11½	3 4 –	11 1 7	12 13 11

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (F.) Miscellaneous Services—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
694 R. L.—623 R. O. F.—533.	20 January 1868 - -	Repairing three boats— 1st. Making new bottom boards, new stern sheets, and repairing the gunwales. 2nd. Making new pulling chock and stretcher. 3rd. Forging and fitting new rudder irons complete, forging and fitting iron band to stern gunwale, making new mast thawt, repairing the fore and after sheets and bottom boards; the whole copper fastened, tarred outside, and painted inside.	2 18 10	– 16 9¾	1 15 1	5 10 8¾	6 6 11¾
717 R. L.—533	4 February 1868 - -	Removing a hut from the end of Priddy's Hard stage, and fixing it on the Ferry Hard, by driving piles, preparing and laying new floor; making and fixing sash and frame, re-hanging the doors, removing the bar from the outside, covering the roof with canvas, and painting complete, with three coats of paint.	4 3 6	3 2 11	2 9 8	9 16 1	11 4 8
731 R. L.—580 R. O. F.—533.	18 February 1868 - -	Lining the hut lately fixed at the Hard with wrought and beaded match-boarding, and making and fixing desk with drawer, cupboard and book shelves; staining and varnishing the whole complete.	3 13 6½	3 – 3	2 3 8	8 17 5½	10 3 6½
529 R. L.—384 R. O. F.—533.	15 October 1867 - -	Repairing the military store vessel "Annie," by making one new thawt, two knees, 30 feet running of moulding, 25 feet of planking; repairing the stern, stem, gunwales, bottom boards, stern-benches, all copper fastened; scraping, caulking, tarring, and painting complete.	2 7 4	1 1 3½	1 8 –	4 16 7½	5 10 8½
619 R. O. F.—533.	23 March 1868 - -	Repairing a Flander's wagon by making and fixing new rave, and new ash-pole; forging and fitting six iron plates, forging and screwing four iron bolts and nuts, forging seven iron stays and two hooks, making and fitting new bottom of elm; fixing and painting the whole complete.	2 7 8	2 12 7¾	1 8 2	6 8 5¾	7 4 9¾
		Experimental Services.					
87—450 -	8 April 1867 - - -	Cost of making an index-plate for a 9-in. 12-ton gun, of a form suggested by Mr. Broome, gunner, Her Majesty's ship "Excellent," for indicating accurately the elevation and depression when firing shot and shell with various charges; including the making of patterns, casting, turning, fitting, and graduating three metal plates fixed together with 4⅜-in. screws, and fitted with two jamming screws and nuts for tightening the plates when adjusted; making a steel pointer and fixing it to the capstan head of elevating spindle; also the attendance of workmen on board Her Majesty's ship "Excellent"; fixing the plate and pointer to the bracket of an iron carriage, by drilling and tapping four ⅜-in. holes, and forging, turning, and screwing of four screws (metal supplied).	3 15 9½	– – 8½	2 5 3	6 1 9	6 19 6

155—450	24 May 1867 - - - (57—2—15,554.)	Making the following alterations to a 9-inch 12-ton iron carriage, mounted in the third turret of Her Majesty's ship "Royal Sovereign," in accordance with the suggestion of Captain C. P. Coles, R. N., viz.: Lowering the front rollers of the carriage to take a bearing when thrown on its rear eccentrics; making parallel holes in the drum heads of the eccentric rear rollers, by dovetailing pieces of iron to prevent the lever slipping, and altering the end of the lever to fit the hole; forging, boring, slotting and bending an iron lever for the purpose of raising the carriage on its front rollers; making an iron pointer for marking the degrees of elevation and depression, and fixing it to the trunnion of the gun; making patterns, casting, fitting, graduating, and stamping a metal arc, and fixing to the carriage by drilling and tapping five ⅜-in. holes, and providing five ⅜-in. screw bolts; drilling and tapping the two pauls, and fitting them with chains and eyes; making and fixing two hooks and two eyes, and fitting the same to the brackets of carriage by drilling and tapping eight ½-in. holes; lengthening by six inches; welding an iron lever; making and fitting four iron studs and plates for stops of levers of rear eccentrics; preparing an iron plate and fastening the same to drum head, by drilling and tapping two ½-in. holes, and making two bolts for fixing it on; making four studs, drilling and tapping four ¾-inch holes, removing the clips from the carriage, and planing off a quarter of an inch from the clips, so as to allow the carriage to be raised higher when thrown on its front rollers. Forging, fitting, and drilling an eye and cleat, and fastening them to bracket of carriage by drilling and tapping two ¼-inch holes, and making screws for fixing. Lengthening two metal buffer bars six inches; cutting two cotter holes, and making keys for the same; making a wooden chock, six inches in thickness, and securing it with four ¾-inch screw bolts and nuts to the front of carriage, to prevent the gun running out too far; manufacturing a shot or shell bearer, in accordance with plans suggested by Captain Coles, R. N., for picking up shot or shell from the deck, including the forging, turning, screwing, drilling, and fitting complete. Again lengthening the buffer bars an additional six inches, by cutting two extra cotter holes, and making two iron collars for the same. Forging, drilling, boring, turning, and fitting an iron lever, fitted with metal sheave; also altering an iron lever, and fitting it with a metal sheave with falls, for the purpose of lifting the carriage on its rollers, including the casting, turning, and boring the metal sheaves and iron pins for the same. Manufacturing two iron double blocks, with metal sheaves, for reeving the falls to the levers when throwing the carriage on its rollers; forging, turning, and fitting two rings and six levers for drum heads of elevating racks, so as to form a wheel, with handles, to elevate and depress the gun by hand, instead of using the elevating lever; forging and fitting complete two wrought-iron brackets, and fixing the same to the brackets of the carriage by drilling and tapping six ½-in. holes, and making six ½-in. screw bolts; also drilling two ¼-in. holes in the rear of the carriage, to hold the priming irons.	41 5 8	5 11 11	24 11 1	71 8 8	81 18 1

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (F.) Miscellaneous Services—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
239—450	23 July 1867	Removing the buffer bar from a 9-in. 12-ton iron carriage, straightening it, and making two iron keys and washers; repairing the elevating wheels by removing the screws and substituting six ⅝-in. iron rivets; boring six ½-in. holes in the drum heads and spindles of elevating gear, and riveting the same together, including the attendance of artificers and labourers on board Her Majesty's ship "Royal Sovereign"; removing and refixing the above fittings.	– 17 2	– – 7½	– 10 1	1 7 10½	1 11 11½
401—450	13 November 1867 (71—1—525)	Cost of manufacturing eight experimental hollow metal rollers, in accordance with suggestion of Major Fraser, R.A., including the making of patterns; casting, turning, and fitting the same with a patent lubricating grease to prevent corrosion as much as possible, and the frequent necessity of removing the rollers for the purpose of lubrication; the attendance of artificers on board Her Majesty's ship "Excellent" to fit these rollers to a 9-in. 12-ton iron carriage and slide for experimental purposes.	4 15 7	18 15 3	2 16 9	26 7 7	30 4 7
588—450	4 March 1868	Making a mahogany wad former for a 64-pounder M. L. R. gun in accordance with drawings furnished from Her Majesty's ship "Excellent."	– 2 –	– 2 2	– 1 2	– 5 4	– 6 1
		Services on Board Her Majesty's Ships and Forts:					
17—524	31 July 1866	Attendance of artificers on board Her Majesty's ship "Mersey" for the purpose of graduating the cascable of a 7-in. 6½-ton gun, laying the gun and adjusting the side scale.	– 8 8	– –	– 5 4	– 14 –	– 16 3
45—524	4 February 1867	Drilling twelve ⅝-in. holes in three 7-in. 6½-ton iron slides on board Her Majesty's ship "Hector," and fitting, boring, and fixing six metal blocks for stop handspikes. (Materials supplied.)	1 – 7	– –	– 12 6	1 13 1	1 18 –
58—424	1 March 1867	Fitting the 8-in. 9-ton iron sliding carriages with loops for side tackle on board the following vessels, viz.: Four on board "Achilles," two on board "Hector," and one on board "Excellent," including the forging, turning, and screwing of 17 iron loops and nuts, and drilling holes in the brackets of carriages for the reception of the loops. (In progress last year.)	1 3 9	– –	– 14 1	1 17 10	2 3 4

61—524	7 March 1867	Attendance of artificers on board Her Majesty's ship "Royal Alfred," in harbour and at Spithead, altering the buffer blocks of ten 9-in. 12-ton gun carriages, including the making of 20 wooden blocks, one inch in thickness; lengthening and re-screwing 40 iron bolts for securing the wooden blocks to the front of carriage; repairing one 9-inch slide by making and fixing a new buffer block with India-rubber rings; housing ten 9-in. guns; raising the housing chocks on ten 9-in. carriages to carry the muzzles of the guns to their proper position when not in action; fitting two dismounting chocks for 6½-ton wooden slides, and adjusting the side scales. (In progress last year.)	6 19 1½	– 13 5¼	4 2 8	11 15 2¾	13 9 9¾
62—524	11 March 1867	Adding wooden blocks, one inch in thickness, to the buffers of the gun carriages of the following ships in Portsmouth Harbour and Spithead, including the making of 98 blocks, and lengthening and re-screwing 198 bolts for securing the blocks to the front of carriage, viz.: 14 9-in. 12-ton carriages, 9 on board "Bellerophon," and 5 at Gun Wharf. 4, 4, 2, 1 } 8-in. 9-ton " on board { "Achilles." "Lord Clyde." "Hector." "Warrior." 3 7-in. 6½-ton " " "Bellerophon." 20 7-in. 6½-ton " " "Minotaur," and at Gun Wharf. (In progress last year.)	10 2 8	– 19 1	6 – 8	17 2 5	19 12 6
65—524	21 March 1867	Attendance of artificers at Spithead for the purpose of housing the 9-in. 12-ton guns on board Her Majesty's ship "Bellerophon." (In progress last year.)	– 4 6	- -	– 2 8	– 7 2	– 8 4
68—524	26 March 1867	Cleaning, connecting, and putting in working order the various fittings of the four 9-inch and the twenty-two 7-inch iron carriages and slides on board Her Majesty's ship "Minotaur," at Spithead. (In progress last year.)	23 6 6	– 8 3	13 17 7	37 12 4	43 2 6
74—524	1 April 1867 23 March 1867 (75—7—1689.)	Attendance of artificers as follows, drilling and tapping the undermentioned W. I. guns for friction pins: 4 9-in. 12-ton guns, Portsmouth Dockyard. 4 9-in. 12-ton " on board Her Majesty's ship "Minotaur." 6 8-in. 9-ton " at Gun Wharf. 22 7-in. 6½-ton " on board Her Majesty's ship "Minotaur." 26 7-in. 6½-ton " at Gun Wharf. 2 64-pr. 64-cwt. guns on board Her Majesty's ship "Orwell."	3 10 10	- -	2 2 –	5 12 10	6 9 5
92—524	10 April 1867	Artificers attending on board Her Majesty's ship "Minotaur," Portsmouth Harbour; housing four 9-in. 12-ton guns, and eighteen 7-in. 6½-ton guns; raising the housing chocks 1¾ inches, by fitting on pieces of elm planking, and securing the same with wooden screws to suit the housing of the guns; fitting the sights, laying the guns, and adjusting the side scales to twenty-two 7-in. 6½-ton, and four 9-in. 12-ton guns.	13 – 6½	1 6 2	7 14 9	22 1 5½	25 5 10½

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (F.) Miscellaneous Services—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
100—524	30 April 1867	Fitting blocks for train whip tackle to the rear of slides on board Her Majesty's gunnery ship "Excellent," including the forging and fitting of six blocks complete; casting, turning, and boring 16 metal sheaves, and fitting same to rear of carriages for preventor ropes; forging, turning, and drilling six pins for the same; also casting, turning, boring, and fitting three metal sheaves for train whip block, in rear of slides.	12 7 4½	5 10 8¼	7 7 4	25 5 4¾	28 19 1¾
102—524	23 April 1867 6 April 1867. (57—2—15,282.)	Cleaning, fitting, and putting together the fittings of a 9 in. iron carriage on board Her Majesty's ship "Royal Sovereign," Portsmouth harbour.	8 5 3	– 5 2¾	4 18 2	13 8 7¾	15 7 10¾
109—524	27 April 1867	Attendance of artificers on board Her Majesty's ship "Bellerophon" at Spithead and Portland, removing and straightening the iron brackets of front rollers of three 9 in. slides, for 12-ton guns; boring out 12 1¾-in. holes in slides and brackets for bolts of a strengthened pattern; forging, turning, and screwing 12 1¾-in. bolts for same, and refixing complete; also removing the pins of rollers which had become set fast through corrosion; cleaning, oiling, and refixing.	7 19 2½	– 15 10½	10 1 10	18 16 11	21 12 –
112—524	29 April 1867	Boring a ¾-in. hole in the tripper of a 7-in. M.L.R. slide belonging to Her Majesty's ship "Chanticleer," to take a lanyard to be used for the purpose of keeping the tripper up, when using the slide for drill purposes.	– – 7	– –	– – 4	– – 11	– 1 1
121—524	2 May 1867	Artificers attending on board Her Majesty's ship "Royal Sovereign," Portsmouth harbour, altering the position of a socket for the rear turret sight, so as to enable it to be clamped outside the turret instead of inside, including the preparation of drawings and patterns; casting, turning, drilling, and fitting of gun metal socket, and drilling, tapping, and fixing two ⅝-in. holes in top of turret.	1 10 10½	– 6 11¾	– 18 4	2 16 2¼	3 4 5¼
123—524	4 May 1867	Cleaning and putting together the fittings of the following iron carriages and slides on board Her Majesty's ship "Warrior," viz.:— 28 7-in. and 4 8-in slides. 28 7-in. and 4 8-in. carriages.	25 2 7	– 9 9½	14 18 3	40 10 7½	46 8 11½
144—524	18 May 1867 4 June 1867. (57—2—15,255.)	Artificers attending on board Her Majesty's ship "Minotaur" in harbour, cleaning and attaching the sights and fittings to two 12-pounder and two 9-pounder guns.	– 8 –	– –	– 4 8	– 12 8	– 14 6

165—524	29 May 1867	Attendance of artificers on board Her Majesty's ship "Minotaur" at Spithead, at various times, examining the fore rollers of the slides and making good the defects; including the forging, drilling, and turning of two 2-inch bolts, ten inches in length for the fore rollers of the 7-inch 6½-ton iron slides, to replace two which were broken on being removed; forging, turning, and screwing one 7/8-inch screw bolt, also forging and fitting 40 ½-inch split pins for bolts of rollers; forging and welding a handle on one self-acting compressor lever, turning off the points of 48 2-inch pins, and easing the same so as to enable them to work more easily in the front rollers; removing 88 brackets from the slides to enable the pins of front rollers to be removed; taking off the running-in and out gear of two 9-inch slides, and cleaning, repairing, and refixing the same; also repairing 352 screw bolts.	20 1 5¾	1 4 3¾	11 18 6	33 4 3½	38 1 3½
176—524	7 June 1867 6 June 1867 (54—Marines—2,678.)	Cost of manufacturing three copper vents, and sending artificers and labourers to Fort Cumberland to drill one 8-inch 65 cwt., one 6-pounder S. B. gun, and one 10-inch mortar, screw in the new vents, and fit the guns with studs for friction tube loops, and guide plates for lanyards.	3 3 2	– 16 5½	1 17 5	5 17 –½	6 14 2½
183—524	13 June 1867	Forging, turning, screwing, and fitting seven 3/4-inch bolts for elevating arcs of 7-inch M.L. guns, and attendance of artificers on board Her Majesty's ship "Calcutta," drilling out one of the old screw bolts, and re-tapping and fitting one of the new.	– 13 –½	– 1 –	– 7 9	1 1 9½	1 4 11½
184—524	14 June 1867 11 November 1865 (75—7—1,377.)	Attendance of artificers at the Coast Guard Station, Little Hampton, for the purpose of drilling and tapping two holes in a 32-pounder gun to take friction pins, also fitting the pins to the gun.	– 5 –	- -	– 19 2	1 4 2	1 7 8
186—524	14 June 1867	Attendance of artificers on board Her Majesty's ship "Hector," Portsmouth Harbour, in order to remove the sights and fittings from the undermentioned guns, viz.:— 4 7-inch - - - - B. L. R. 6 100-pounder - - - 6¼ ton. 10 68-pounders. 2 20 „ - - - B. L. R. 1 6 „ - - - Bronze.	– 11 2	- -	– 6 7	– 17 9	1 – 5
190—524	15 June 1867	Artificers attending on board Her Majesty's ship "Royal Sovereign" in harbour, refitting the sockets on turrets for two hind and two fore sights; adjusting the sights; cutting out two 2-inch holes in turrets to receive the hind sockets; drilling and tapping four 5/8-inch holes in turrets for screwing on the sockets for tangent sights; cutting of socket guards and fitting same to turret sights; drilling and tapping 12 ½-inch holes in turrets; forging, turning, and screwing 12 ½-inch bolts for securing the foresights to the turrets, and casting and fitting of two lead flanges for raising foresights to the required height; making pattern, casting, turning, and boring two metal stays for supporting the guards of tangent sights; making four ½-inch screw bolts and fastening the same to roofs of turrets; also drilling and tapping two 5/8-inch holes in roof of turrets and fixing two guides for lanyards.	7 4 10½	– 7 10¼	4 6 2	11 18 10¾	13 13 8¾

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (F.) Miscellaneous Services—*continued.*

Number of Order.	Date of Requisition or Authority.	DESCRIPTION.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£ s. d.	£. s. d.
191—524 -	17 June 1867 - -	Attendance of artificers on board Her Majesty's ship "Royal Sovereign" in harbour, removing side plate compressor bolts from a 12-ton gun carriage; altering them in the R.O.F., and re-placing them on the carriages on board.	1 8 9	- -	- 17 1	2 5 10	2 12 8
195—524 -	18 June 1867 - - 12 June 1867. (57—2—15,757.)	Artificers attending on board Her Majesty's ship "Warrior," in harbour, and at Spithead, adjusting the chocks of four 8-in. 9-ton, and 22 7-in. 6½-ton guns on the main deck, in order to raise the muzzles of the guns to their proper position when the ship is not in action.	4 9 2½	1 7 3½	2 12 6	8 9 -	9 13 8
197—524 -	21 June 1867 - -	Fitting the sights and fittings to the under-mentioned guns on board Her Majesty's ship "Mersey:" 4 7-in. - - - B.L.R. 20 10-in. - - - S.B. 1 6-pounder - - Bronze. 12 7-in. - - - B.L.R. 2 12-pounder - - " 2 9-pounder - - "	2 4 9½	- -	1 6 6	3 11 3½	4 1 8½
199—524 -	21 June 1867 - - 23 March 1867. (75—7—1,689.)	Attendance of artificers on board Her Majesty's ship "Mersey" in harbour, and drilling and tapping a second hole for friction pins in the following ordnance: 4 7-in. - - - M.L.R. 20 10-ins. - - - S.B. 1 6-pounder - - Bronze. 12 7-in. - - - B.L.R. 2 12-pounders - - " 2 9-pounders - - "	1 4 6	- -	- 14 5	1 18 11	2 4 7
201—524 -	21 June 1867 - - 18 June 1867. (54—Marines—2,699.)	Attendance of foremen and artificers at Fort Cumberland, cutting ten holes in the brackets of 8-in. 65 cwt. gun-carriages for breeching ropes similar to those in 64-pounder carriages.	1 5 5	- -	- 15 -	2 - 5	2 6 3
202—524 -	20 June 1867 - -	Drilling, turning and screwing a new copper vent for a 32-pounder gun, in charge of the coast-guard at Littlehampton, and attendance of artificers at that place, drilling out the old vent, re-tapping the guns, and re-fitting the new vent.	- 13 6	- 5 4½	1 4 1	2 2 11½	2 9 3½
203—524 -	14 June 1867 - - 12 June 1867. (57—2—15,757.)	Attendance of artificers on board Her Majesty's ship "Warrior," in harbour, fitting the sights and fittings to, and adjusting, the side scales of the under-mentioned guns, viz.: 4 8-in. - - - 9-ton. 28 7-in. - - - 6½-ton. 3 12-pounder - - B.L.R. 1 9-pounder - - "	3 4 8	- -	1 18 2	5 2 10	5 17 11

207—524	25 June 1867	Altering the degrees of elevation and depression on two tangent sights from six to four degrees, on board Her Majesty's ship "Royal Sovereign"; also re-casting, turning, drilling, and fitting two metal sheaves for preventor ropes; forging, turning, and fitting two iron pins for the same; and attendance of artificer on board Her Majesty's ship "Excellent," fitting the same to a carriage for a 7-inch Whitworth gun.	- 8 10	- - 4½	- 5 3	- 14 5½	- 16 7½
211—524	29 June 1867	Cost of artificers attending on board Her Majesty's ship "Royal Sovereign" in harbour, removing the socket of tangent sight from the fourth turret, and replacing another.	- 8 4	- -	- 4 10	- 13 2	- 15 2
215—524	4 July 1867 29 June 1867. (71—1—482.)	Attendance of artificers on board Her Majesty's ships "Bellerophon," "Minotaur," "Warrior," "Hector," "Excellent," and "Ariadne," at Spithead and Portsmouth Harbour; fixing pins to the iron carriages for keeping the rear rollers in their places, removing the brackets, drilling and preparing them in the R. O. F. to receive the pins.	31 8 4¼	1 6 3	18 13 2	51 7 9¼	58 17 7¼
219—524	5 July 1867	Fitting together the 150-pounder wooden carriage, and adjusting the fittings in the fourth turret of Her Majesty's ship "Royal Sovereign," Portsmouth Harbour.	1 4 3	- -	- 14 3	1 18 6	2 4 1
224—524	6 July 1867 23 March 1867. (75—7—1,689.)	Cost of artificers attending on board Her Majesty's ship "Dauntless," at Spithead, fitting the under-mentioned guns with a second hole for friction pins, viz.: 1 68-pounder, 20 8-inch, 9 32-pounders; 1 12-pounder howitzer, and 1 6-pounder bronze. Also, fitting four 32-pounder guns with double studs.	1 9 3	- -	- 17 5	2 6 8	2 13 6
235—524	18 July 1867	Artificers attending on board Her Majesty's ship "Bellerophon," at Spithead, repairing the left-hand shaft of the running-in gear of the Woolwich gun carriage and slide; forging, turning, and fitting a new shaft and four ¾-inch bolts for the same; removing and cleaning the running in and out gear, cutting oil tracks in the wheels, straightening the links of the chains, and putting the whole in thorough working order; forging and screwing one eye-bolt and nut, and fixing the same in rear of a 9-inch 12-ton iron gun carriage to secure the gun when at sea.	3 5 -½	- 1 10½	1 18 7	5 5 6	6 - 11
240—524	24 July 1867	Artificers attending on board Her Majesty's colonial ship "Nelson," in Portsmouth Harbour, laying and housing the guns, 20 32-pounders and 20 64-pounders; also, graduating 120 beds and coins.	8 - 10	- 19 -½	4 15 7	13 15 5½	15 15 7½
242—524	24 July 1867	Adjusting two 7-inch B. L. R. slides on board Her Majesty's ship "Mersey"; making one iron loop, and fixing to rear of slide; forging eight iron bolts, and fitting the same to the heads of the slides; also, repairing four lugs and four iron plates.	2 14 11	- 12 2	1 12 6	4 19 7	5 14 1
249—524	27 July 1867	Attendance of artificers on board Her Majesty's ship "Warrior," Portsmouth Harbour; removing the trippers from 28 7-inch slides; conveying the trippers to R. O. F., drilling and fitting the same for lanyards, and replacing them on the slides in the above ship.	- 19 10½	- -	- 11 10	1 11 8½	1 16 3½

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (F.) Miscellaneous Services—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
256—524 -	30 July 1867 - -	Artificers attending on board Her Majesty's ship "St. George," in Portsmouth Harbour, examining the Armstrong guns, examining and re-adjusting the sights and fittings of 26 8-inch guns, 22 32-pounders, one 24-pounder, and one 6-pounder bronze gun; also forging, turning, slotting and shaping a trunnion sight of old pattern, boring out the old sights and adjusting the new ones.	6 6 5½	- 6 6	3 15 1	10 8 -½	11 18 4½
258—524 -	31 July 1867 - -	Repairing the gun carriages in the third turrret of Her Majesty's ship "Royal Sovereign," by disconnecting the gear leading from centre to rear eccentric shaft for raising the carriage on the front rollers; drilling and tapping four holes in the brackets for rear eccentric rollers of carriages; forging and drilling four keys for steadying rear eccentric shaft; making patterns, casting, turning, and fitting two metal rear eccentric rollers; forging and fitting one strong iron eye-loop, and fixing the same to the rear of the carriage for attaching the running in and out gear; cutting two semicircular holes, 2½ inches diameter, in the bottom of the carriage for chains of running in and out gear to pass through; forging and fitting one strong chain strap to be used for the running in and out gear in case the other should be carried away; forging, turning, and screwing six ⅝-in. bolts, enlarging six holes from ½-in. to ⅝-in., and tapping them in brackets of carriages for fixing two wrought iron brackets; attaching the blocks for heaving up the rear roller levers when required to run the carriage in and out; forging, turning, and screwing two 1⅛-in. nuts for jamming iron loops in sides of carriages; filing the teeth of the elevating racks to remove bruises; plugging, drilling, six ¼-in. holes for fixing steadying pins in pointer of trunnion, and fitting two iron brackets and fixing them to a rear clip of carriage to be used as rests for rear levers; forging, turning, and screwing of six ¾-in. bolts and nuts, and drilling and tapping six ¾-in. holes; forging, turning, and screwing 10 ¾-in. bolts and nuts; drilling and tapping 10 ¾-in. holes in the side of carriages; forging, turning, boring, and shaping two iron flanges and shrinking same on to the ends of two spindles for fixing pauls, turning the spindles to receive them, and drilling 10 13-in. holes and fixing same to side of carriage; making a girder of angle and T iron 4 ft. ¾ in. × 6 ft. 3½ in. with a wooden backing 5¼ in. × 2¾ in., and fixing it to front of carriage to prevent the elevating racks being thrown out of gear by the depression of the gun; drilling and tapping 12 ⅝-in. holes, and forging, turning, and screwing 20 ⅝-in. bolts and nuts for securing the wood backing to the girder, and the girder to the front of the carriage; altering the position of the lanyard guide on the top of the gun by drilling and tapping one ½-in. hole in the reverse side of the gun; tightening up and securing all bolts and nuts shaken loose.	21 - 9½	4 18 5	12 10 2	38 9 4½	44 1 6½
266—524 -	3 August 1867 - -	Cleaning and connecting the fittings of 10 7-in. 6½ ton iron carriages and slides on board Her Majesty's ship "Excellent" in Portsmouth Harbour.	4 15 1	- -	2 16 5	7 11 6	8 13 7
270—524 -	5 August 1867 - -	Cost of artificers attending on board Her Majesty's ship "Bruiser," Portsmouth Harbour, fitting the side scales, laying the guns, and adjusting and re-stamping four wood side scales of the 64-pounder guns.	- 9 4	- -	- 5 6	- 14 10	- 17 1

274—524	7 August 1867 6 June 1867. (57—2—15,664.)	Attendance of artificers on several occasions on board Her Majesty's ship "Minotaur," at Spithead, for the purpose of fitting stops and blocks to 26 7-inch 6½-ton iron slides, to prevent the sockets of the front eccentric traversing rollers dropping on the deck.	3 8 4	- -	2 – 4	5 8 8	6 4 5
279—524	10 August 1867	Cost of artificers attending on board Her Majesty's ship "Excellent," Portsmouth Harbour, adjusting the iron carriages and slides; including the forging, fitting, and screwing of one side loop, and fixing it to the rear of a 9-inch iron slide; making six copper pins for keeping the india-rubber buffer rings on their studs, and forging and fitting 40 split pins for spindle of front and rear rollers.	1 19 3	– 1 6	1 3 8	3 4 5	3 13 9
282—524	12 August 1867 6 June 1867. (57—2—15,664.)	Fitting bolts and stops to the front eccentric rollers of the iron slides on board the following ships, to prevent the sockets dropping on the decks, viz.:— Her Majesty's ship "Pallas" - - 4 " "Hector" - - 3 " "Excellent" - - 2 " "Warrior" - - 32	5 15 7¾	– 1 9	3 8 10	9 6 2¾	10 13 5¾
293—524	20 August 1867	Cleaning, connecting, and adjusting the fittings of four 7-inch iron carriages and slides on board Her Majesty's ship "Ariadne."	3 2 9¼	– 1 9¼	1 17 4	5 1 10¾	5 16 8¾
297—524	22 August 1867 29 July 1867. (57—2—16,022.)	Drilling, tapping, and fitting 16 64-pounder guns for friction tubes on board Her Majesty's ship "Nelson," also drilling the guns, and fitting them with guide plates.	2 3 7	- -	1 6 1	3 9 8	3 19 11
298—524	22 August 1867	Cost of artificers attending on board Her Majesty's ship "St. George," Portsmouth Harbour, repairing two 7-inch B. L. guns, Nos. 54 and 60, including the cutting out of the copper breech bouches, and re-bouching with double iron bouches, also re-facing the breech bouches of three 40-pounder B. L. guns, Nos. 170, 185, and 474.	4 8 9	1 8 2¼	2 12 7	8 9 6¼	9 14 2¼
301—524	26 August 1867	Artificers attending on board Her Majesty's coast guard vessel, Portsmouth Harbour, for the purpose of re-venting 11 32-pounder 58-cwt. cast iron guns, and one 6-pounder bronze gun; boring, turning, and screwing 12 new copper vents, re-tapping the guns, screwing in, cutting off, and filing the new vents; preparing and fitting 34 8-inch 65-cwt. guns, and one 6-pounder bronze gun to receive pins for friction tubes with loops, also enlarging the vents of the above guns to the proper size.	12 4 7½	2 1 9¼	7 5 5	21 11 9¾	24 14 9¾
303—524	27 August 1867	Attendance of artificers on board Her Majesty's ship "Ariadne," Portsmouth Harbour, laying and housing 18 10-inch guns, and adjusting and graduating 54 beds and coins for the same; also laying, housing, and adjusting the side scales of four 7-inch 6½-ton guns on the main deck; and adjusting the side scales for four 64-pounder guns on the upper deck.	8 11 1	1 9 5¼	5 1 6	15 2 –¼	17 6 –¼

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (F.) Miscellaneous Services—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Labour.	Material.	Indirect Expenditure.	TOTAL COST Per Balance Sheet, No. 1.	TOTAL COST Per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
309—524 -	29 August 1867 - - (57—2—16,215.) 24 August 1867.	Preparing four 32-pounder guns on board Her Majesty's ship "Asia," for friction tubes, with loops, by drilling and tapping them with a second hole to receive pins.	- 8 4	- -	- 4 11	- 13 3	- 15 3
310—524 -	29 August 1867 - -	Moulding, re-casting, fitting, filing, and polishing a metal yoke for the rudder of a boat for Quartermaster General's Department, Portsmouth.	- 5 1	- 3 1½	- 2 11	- 11 1½	- 12 9½
312—524 -	30 August 1867 - -	Forging, boring, slotting, planing, and fitting a compressor lever for a 9-inch 12-ton gun carriage; forging, turning, and fitting one bolt with eye for joint of side plate experimental compressor, and attendance of workmen on board Her Majesty's ship "Excellent," for the purpose of fitting the same, adjusting the carriage, and putting the whole in working order.	1 17 6	- 3 2	1 - 2	3 - 10	3 9 8
319—524 -	2 September 1867 - - (54—Marines—2,746.) 23 August 1867.	Attendance of artificers at the head-quarters of the Royal Marine Artillery, at Fort Cumberland, re-venting a 7-inch B. L. R. W. I. gun, No. 164, and repairing a 9-pounder B. L. R. limber.	4 3 6	- 4 9½	2 9 8	6 17 11½	7 18 1½
324—524 -	9 July 1867 - -	Altering and repairing a platform (No. 437) for a 9-inch 12-ton gun, on board Her Majesty's colonial ship "Nelson," including the removal of two iron brackets, by cutting away the iron rivets, removing eight bolts, plugging up 12 holes, and refixing the brackets to the platform.	3 2 11	- 1 -	1 17 4	5 1 3	5 16 -
328—524 -	10 September 1867 -	Attendance of foremen and artificers on board Her Majesty's ship "Calcutta," Portsmouth Harbour, examining the bolts of the elevating arcs of the 7-inch M. L. R. guns, the pins and sheaves of preventer ropes of the 7-inch and 100-pounder guns; afterwards, forging, screwing, and fitting 20¾-inch bolts for securing the arcs to the guns; moulding, casting, turning, and boring seven metal sheaves for preventer ropes; forging, turning, and fitting four studs for sheaves of carriages, and two pins for slides.	2 15 9	- 3 3	1 13 2	4 12 2	5 5 8
331—524 -	14 September 1867 - (57—2—15,246.) 17 April 1867.	Adjusting the housing-beds of ten 100-pounder or 7-inch M. L. R. wrought-iron carriages, on board Her Majesty's ship "Excellent," to enable the muzzles of the guns to be secured to the top of ports when not in use.	1 2 1	- -	- 13 2	1 15 3	2 - 5
342—524 -	23 September 1867 - (57—2—16,022.) 29 July 1867.	Adjusting the sights and fittings of sixteen 64-pounder Palliser guns, and twenty 32-pounder S. B. guns, on board Her Majesty's colonial ship "Nelson," in Portsmouth Harbour, cleaning and connecting the fittings of two carriages and slides.	5 19 1	- 1 8¾	3 11 2	9 11 11¾	11 - 2¼

344—524	24 September 1867	Cost of examining, altering, and repairing a 100-pounder carriage and slide, and a 7-inch M. L. gun, on board Her Majesty's ship "Excellent," including the making of patterns, moulding, casting, turning, and fitting two metal front rollers; forging, boring, slotting, planing, shaping, and fitting an iron joint for plate on head of slide, to receive an elongated flap; repairing the running in and out gear, by shaping an iron plate, ¼-inch in thickness, and drilling and tapping eight ¾-inch holes, and making two guides for the same; repairing the thread of six 1-inch bolts; also making and fitting a light iron platform for rear of slide.	5 5 6½	3 12 -½	3 2 11	12 - 6	13 15 7
346—524	- - - - - -	Repairing a 7-inch M. L. R. gun (No. 6) on board Her Majesty's ship "Calcutta," to receive a new vent.	1 4 10	- -	- 14 10	1 19 8	2 5 6
349—524	29 September 1867	Repairing the breech tangent sight of a 7-inch B. L. R. gun, belonging to Her Majesty's ship "Gladiator," including the making of new top, graduating and engraving the bar; straightening and adjusting the vernier screw; making and fitting a new collar and pin, and repairing the leaf.	- 10 7½	- - 2	- 6 5	- 17 2½	- 19 11
354—524	5 October 1867	Re-venting a 100-pounder S. B. gun, including the manufacture of a new copper vent, and attendance of artificers on board Her Majesty's ship "Calcutta;" boring out the old and fitting the new vent.	1 6 4	- 6 -	- 15 7	2 7 11	2 15 1½
363—524	14 October 1867	Making a new copper vent, drilling out an old vent and screwing in the new, and finishing off, to a 64-pounder, M. L. R. gun, No. 183, on board Her Majesty's ship "Excellent," Portsmouth Harbour.	1 10 4	- 5 5	- 17 11	2 13 8	3 1 8
368—524	15 October 1867	Altering an iron carriage in the third turret of Her Majesty's ship "Royal Sovereign," as suggested by Captain Hood, of Her Majesty's ship "Excellent," and approved by the Admiralty, including the forging, turning, and screwing of two eye-bolts and nuts for the running-in chains; forging, turning, and screwing two 1¾-inch bolts and six ⅞-inch bolts and nuts; drilling and tapping two 1¾-inch holes and two 2⅛-inch holes; making and fixing a wrought-iron plate for securing the eye-bolts to the carriage, and strengthening the bottom of carriage; also, refitting and adjusting the housing-bed, and adjusting the shackles and chains.	4 17 8	1 - 2	2 18 2	8 16 -	10 1 8¾
369—524	16 October 1867	Forging, turning, and screwing 33 bolts for securing the elevating arcs to guns on board Her Majesty's ship "Excellent," and attendance of workmen; boring out nine broken bolts, and re-tapping and fitting nine new ones to a 100-pounder S. B. gun.	1 19 8	- 2 6	1 3 8	3 5 10	3 15 5½
371—524	19 October 1867	Lengthening the eye-bolts of a slide on board Her Majesty's ship "Royal Sovereign;" forging and fitting two iron washers 5 inches diameter; making two india-rubber washers, 1 inch × 4½ inches, and attendance of artificers fitting the same to the slide in the third turret.	- 4 9½	- 12 3	- 2 10	- 19 10½	1 2 9

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (F.) Miscellaneous Services—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
377—524	22 October 1867	Repairing the stage for housing the Lieutenant Governor's barge "Portsmouth," including the forging and fitting of two iron loops, and providing 56 feet of ¾-inch chain for making the stage fast to the moorings. Repairing the floor of stage by turning and fitting four wooden rollers; forging and fitting 10 studs and 20 plates, and boring and fitting an iron band; also making four stools for supporting the barge on an even keel, and repairing the bow board.	7 15 –	6 – 7¾	4 12 2	18 7 9¾	21 1 7¾
388—524	2 November 1867	Attendance of artificers on board Her Majesty's ship "Excellent," Portsmouth Harbour, cleaning and connecting, for an experiment, the fittings of a 7-inch M. L. R. carriage and slide.	1 12 11	- -	– 19 8	2 12 7	3 – 6
390—524	2 November 1867	Making and fitting, for Her Majesty's ship "Excellent," a housing-chock for a 9-inch gun to answer the purpose of a platform for rear of slide, when not otherwise required. Making and fitting a chock to an 8-inch gun, and repairing the axletrees of an 8-inch gun carriage, including the forging and fitting of iron straps, and attendance of artificers fitting the same. Repairing the stops for the sockets of the rear rollers of the 9-inch and 8-inch gun carriages; also repairing an 8-inch shell extractor.	3 18 2½	– 19 –½	2 6 11	7 4 2	8 5 6
391—524	6 November 1867 (57—2—16,622.) 31 October 1867.	Fitting the sights and adjusting the slide scales of two 7-inch 6½-ton guns, and four 64-pounder guns on board Her Majesty's ship "Danæ;" also, laying the 64-pounder guns for the guidance of the dockyard authorities in cutting out the port buckles.	– 13 5	- -	– 7 9	1 1 2	1 4 3
398—524	9 November 1867	Cost of attendance of foreman on board Her Majesty's ship "Excellent," and receiving instructions for making the undermentioned alterations to a 64-pounder gun carriage; afterwards making new rear axletree and depression chock, boring holes in same for the socket of the elevating screw, and bouching the socket with gun metal. Making pattern, moulding, casting, turning, boring, and fitting the metal nut of elevating screw in the top of socket. Setting the elevating screw at the required angle, to enable the head of the screw to take fairly under the head of breech, and give all the depression the port would allow. Making an elm chock one inch in thickness, and fixing the same to the fore axletree to raise the carriage to main-deck height; also, forging, turning, and fitting a new ring with square stud, to fit the socket and prevent the handle turning when elevating or depressing the gun; and forging, turning, and fitting a new end to a lever of an elevating screw.	6 15 5½	4 7 1½	4 – 6	15 3 1	17 7 4
394—524	9 November 1867	Cost of attendance of foreman on board Her Majesty's ship "Excellent," Portsmouth Harbour, examining the buffer chocks of a gun carriage.	– 3 –½	- -	– 1 9	– 4 9½	– 5 6

406—524	15 November 1867	Repairing the side-plate compressor of a 100-pounder S. B. gun on board Her Majesty's ship "Excellent," including the attendance of artificers on board; removing the same from the carriage, and forging, turning, screwing, and fitting new ends.	– 9 –	– 1 –	– 5 5	– 15 5	– 17 9
407—524	16 November 1867	Raising the housing chocks of a 7-inch 6½-ton iron carriage on board Her Majesty's ship "Excellent," to enable the muzzle of the gun to reach its proper position at the top of the port.	– 5 –	– –	– 2 11	– 7 11	– 9 2
408—524	16 November 1867	Repairing the buffer block of a 9-inch 12-ton gun carriage on board Her Majesty's ship "Royal Sovereign."	1 5 5½	– –	– 15 5	2 – 10½	2 6 10½
415—524	19 November 1867	Repairing a 9-inch 12-ton gun on board Her Majesty's ship "Excellent." (Still in progress.)	– 19 3	– 5 8½	– 11 8	1 16 7½	2 2 –½
419—524	21 November 1867 20 November 1867. (54 Marines—2826.)	Inspecting and reporting upon the ship battery "Forton," previous to arrangements being made for the reception of the new armament.	– 8 4	– –	– 4 11	– 13 3	– 15 3
428—524	29 November 1867	Repairing the Lieutenant Governor's barge, including the making and fitting of iron keel band, and repairing stern gratings, gang board, seats, and metal work of boom.	1 12 9½	– 7 –¾	– 19 7	2 19 5¼	3 8 1½
442—524	7 December 1867	Manufacturing a copper vent for a 32-pounder 39 cwt. gun in charge of the Coast Guard at Hurst Castle, Isle of Wight, and sending workmen to drill out the old and fit the new vent; also, cost of sending workmen to Hove, Brighton, 39 Tower, Hastings, Camber, Hastings, and Bembridge, Isle of Wight, for the purpose of repairing and fitting one 32-pounder 42-cwt. gun at each place with guide plates and friction pins; also, enlarging the vents for quill friction tubes with loops.	4 4 10	– 2 9	12 11 1	16 18 8	19 8 –
446—524	10 December 1867	Fitting ten 7-inch 6½-ton iron slides on board Her Majesty's ship "Excellent" with the improved elastic buffer arrangement, including the making of 20 elastic buffers and 20 brackets for rear of slide, and 40 elastic buffers for front of slide; also, forging, turning, and fitting 10 iron studs and 10 bollards, for securing the carriages and slides with preventor ropes.	99 6 7½	28 3 6	59 – 2	186 10 3½	213 11 2½
447—524	10 December 1867	Making three copper vents, and sending men on board Her Majesty's ship "Calcutta," Portsmouth Harbour, for the purpose of drilling out the old vents and fitting the new in the following guns; viz.: One 100-pounder S. B., W. I. One 8-inch S. B., C. I. One 32-pounder S. B., C. I.	4 15 7	– 17 –¼	2 16 11	8 9 6¼	9 14 2¼
459—524	10 December 1867	Repairing an iron water tank belonging to the military store vessel "Anne," by cutting out the old bottom, and punching, drilling, and rivetting on a new one; recaulking, making water tight, and painting complete.	1 2 6	– 4 2	– 13 4	2 – –	2 5 10

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (F.) Miscellaneous Services—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
463—524	18 December 1867	Removing the iron brackets for roller handspikes from a 7-inch 6½-ton gun carriage on board Her Majesty's ship "Excellent," Portsmouth Harbour, boring a hole in bottom of carriage, and making, riveting, and fitting an iron stud.	– 14 10	– – 1¾	– 8 9	1 3 8¾	1 7 1¾
488—524	7 January 1868	Altering and repairing the 9-inch 12-ton gun slides and gear used in connection with the working of the guns and carriages on board Her Majesty's ship "Minotaur," at Spithead, including the forging, turning, boring, and fitting of two steel bolts for front rollers of slides, and attendance of artificers on board fitting the same, laying the guns, and adjusting the tangent scales, also turning down the ends of 94 compressing and adjusting levers.	10 7 5½	3 9 4¾	6 3 –	19 19 10¼	22 18 –¼
493—524	9 January 1868	Cost of sending an artificer on board Her Majesty's ship "Excellent," Portsmouth Harbour, and removing a broken compressing lever from a 9-inch 12-ton gun carriage; welding on a new end, filing, fitting, and adjusting the same.	– 11 7½	– 1 5	– 6 6	– 19 6½	1 2 3½
498—524	11 January 1868	Repairing a 7-inch B. L. rear chock carriage on board Her Majesty's ship "Excellent," and repairing and adjusting the depression chocks and beds of two 32-pounder 58-cwt. guns.	2 4 8½	– 7 4¾	1 6 5	3 18 6¼	4 9 11¼
527—524	30 January 1868 3 December 1867. (57—2—16,817.)	Cost of laying four 20-pounder B. L. guns on board Her Majesty's ship "Pandora," and easing the transoms of four 20-pounder rear chock carriages, so as to give the guns as much depression as the port sills would allow.	– 10 5½	- -	– 6 2	– 16 7½	– 18 11½
529—524	30 January 1867	Repairing the claw of one of the rear eccentrics of an 8-inch M. L. R. slide, on board Her Majesty's ship "Hector," including the removing the claw to the R. O. factory for the purpose of setting.	– 13 6	- -	– 7 11	1 1 5	1 4 8
533—524	3 February 1868	Making 20 copper vents for 18-pounder S. B. guns; also making 48 iron clouts for the axletrees of twelve 18-pounder gun carriages, and attendance of workmen on board Her Majesty's training ship "St. Vincent," Portsmouth Harbour, drilling out the old vents from the guns, and screwing in, fitting, and cleaning off the new; also removing 48 old clouts, plugging up the nail holes, fixing the new clouts, and turning off the trucks.	12 1 6½	4 5 1	7 3 7	23 10 2½	26 18 9½
534—524	3 March 1868	Removing eight brackets of rear eccentric rollers from four 8-inch 9-ton gun carriages on board Her Majesty's ship "Pallas," boring, cutting, and filing 16 holes in the brackets to receive keys for supporting the eccentrics in their proper position; forging, filing, boring, and fitting 16 keys, and fixing them to the gun carriages.	1 8 10½	– 1 9¾	– 17 3	2 7 11¼	2 14 11¼
535—524	2 March 1868 2 April 1867. (57—2—15,255.)	Fitting a centre hind sight to a 9-inch 12-ton gun on board Her Majesty's "Minotaur," Portsmouth Harbour.	– 4 4½	- -	– 2 6	– 6 10½	– 7 11½

540—524	4 February 1868	Cost of making a new copper vent, and sending workmen to coast-guard station, Blatchington, Brighton division, for the purpose of drilling out the old vents, and screwing in and finishing of the new in a 32-pounder 42-cwt. gun; also boring, screwing, and fitting two studs for the use of friction tubes with loops, and fitting a guide plate to the breech of the gun.	2 2 11½	– 3 –¾	6 7 7	8 13 7¼	9 19 –¼	
541—524	1 February 1868	Removing two 20-pounder boat slides from Her Majesty's ship "Avon," Portsmouth Harbour, to the R. O. factory for the purpose of making the following alterations and additions, viz.:— *Bow slide.*—Taking out and remaking two cross bars, one fitted with fighting bolt hole, the other to suit the position required for the traversing bolt; raising two friction plates by adding blocks of wood 1-inch in thickness, for the purpose of giving more clearance from the platform, and rounding off the corners of the head of the slide to allow the necessary training. *Stern slide.*—Taking out and fitting two cross bars, one fitted with fighting bolt hole, the other to fit the rear block; making an elm block 23 inches in depth, and fitting the same to rear of slide; moulding, casting, boring, turning, filing, and fitting together one gun metal flap, and one gun metal catch for pivot flap; forging and screwing three iron bolts and nuts for securing the block to the slide, and forging and boring two iron stays for strengthening the same; forging and screwing eight coach screws and four bolts and nuts for securing the stays to the block and slide; forging, boring, and fitting two iron brackets with loops and rivets, and fitting to the rear block; altering three fighting bolts to suit the slides, and making one new key with chain, rounding off the head of slide to allow of the necessary training; also the cost of attendance of workmen making various alterations in accordance with the suggestions of the officer commanding Her Majesty's ship "Excellent."	9 1 3	3 2 –½	5 7 9	17 11 –½	20 2 3½	
549—524	10 February 1868	Cost of sending artificers and labourers to Her Majesty's ship "Minotaur," Portsmouth Harbour and Spithead, to repair four 9-inch 12-ton slides and carriages, by lengthening and steeling the tops of four trippers, and re-boring the stud holes, welding a new end to a broken adjusting lever, and forging, turning, and screwing five bolts for securing pivots to head of slide; also altering to new pattern the trippers of twenty-two 7-inch 6½-ton gun slides, by steeling the top of each, and re-boring the stud holes, and forging and fitting 18 split keys for roller pins of eccentrics.	10 11 11½	– 12 10¾	6 5 11	17 10 9¼	20 1 9¼	
550—524	8 February 1868	Altering on board Her Majesty's ship "Excellent," the numbers on a 32 pounder gun 58-cwt., from 1,668 to 354, and an 8-inch 65-cwt. gun from 1,741 to 353; these guns were fitted on Major Palliser's principle; also attendance on board the mortar gun-boat attached to "Excellent," and repairing a 13-inch mortar bed, by removing the socket for receiving the trail, and refixing a new one of gun metal.	1 13 11	– 13 5	1 – 2	3 7 6	3 17 5	

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (F.) Miscellaneous Services—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
560—524 -	15 February 1868 - -	Attendance of workmen on board Her Majesty's ship "Excellent," Portsmouth Harbour, for the purpose of housing and adjusting the beds and coins of one 7-inch 6½-ton B. L. rear chock gun carriage, and one 32-pounder 58-cwt. common carriage.	- 15 2½	- 5 10	- 8 11	1 9 11½	1 14 4½
567—524 -	20 February 1868 - -	Making a gun-metal flap six inches longer than the service pattern, including the preparation of drawings; moulding, casting, turning, boring, and filing the flap, and attendance of artificers on board Her Majesty's gun-vessel "Stork," for the purpose of fitting it to a 7-inch M. L. R. gun slide.	1 - 5	1 10 6½	- 12 1	3 3 -½	3 12 3½
573—524 -	25 February 1868 - - 23 March 1867. (75—7—1689.)	Boring and tapping twenty 18-pounder 22-cwt. guns, and one 12-pounder howitzer, for the purpose of receiving studs for quill friction tubes with loops, including the conveyance of workmen and tools to and from Her Majesty's training ship "St. Vincent," Portsmouth Harbour.	- 16 10	- -	- 10 -	1 6 10	1 10 10
575—524 -	26 February 1868 - -	Cost of attendance of foreman on board of Her Majesty's ship "Hector," Portsmouth Harbour, and examining three iron slides.	- 2 7½	- -	- 1 7	- 4 2½	- 4 9½
577—524 -	27 February 1868 - - 20 January 1868. (57—2—17,067.)	Attendance of workmen on board Her Majesty's ship "Hector," Portsmouth Harbour, cleaning and adjusting the fittings of sixteen 7-inch 6½-ton gun carriages and slides. (Still in progress.)	9 5 10	- 6 3½	5 10 4	15 2 5½	17 5 5½
578—524 -	27 February 1868 - - 7 February 1868. (57—2—17,298.)	Cleaning and putting together a 7-inch 6½-ton iron gun carriage and slide on board Her Majesty's ship "Avon."	1 2 9	- - 10	- 13 6	1 17 1	2 2 5
582—524 -	29 February 1868 - - 27 February 1867. (57—2—17,456.)	Altering a 7-inch 6½-ton double plate iron carriage on board Her Majesty's ship "Excellent," including the forging and drilling, casting, turning, boring, and fitting of two iron brackets fitted with gun-metal sheaves, and fixing them to the sides of the carriage, to be used as snatch blocks for the winches of the running-in-and-out gear; forging, turning, and screwing two iron bollards with wooden bodies, and fixing the same to the slide for securing the ends of the training tackle when in a rough sea; forging the iron work complete for four swivel blocks, and moulding, casting, turning, boring, and fitting on four gun-metal sheaves; forging and turning one stud with T head for securing the end of preventor rope to the carriage; enlarging the two rear loops of slide, so as to take the swivel blocks and hooks of training gear at the same time.	17 2 -	1 6 -	10 3 4	28 11 4	32 14 7

586—524	3 March 1868	Fitting two metal blocks to the fore part of an 8-inch 9-ton slide for the use of the stop handspike when training, and attendance of workmen on board Her Majesty's ship "Hector," drilling and lapping the slide, fixing the blocks, and adjusting the two front rollers; also painting a 7-inch 6½-ton gun slide.	2 – 7½	1 14 3¾	1 4 1	4 19 –¼	5 13 5½
596—524	10 March 1868 31 October 1867. (57—2—16,598.)	Cleaning and putting together the fittings of a 7-inch 6½-ton iron gun carriage and slide on board Her Majesty's ship "Ringdove."	– 11 8	- -	– 6 10	– 18 6	1 1 2
602—524	16 March 1868	Sending workmen to Her Majesty's ship "Minotaur" at Spithead for the purpose of fitting hollow rollers filled with grease to a carriage, in order to test the general efficiency of the rollers when at sea and the guns firing battering charges.	– 17 1½	- -	– 10 2	1 7 3½	1 11 3½
607—524	17 March 1868	Removing a broken hinged block from the rear of a 7-inch 6½-ton gun slide; forging, boring, and fitting a new hinge strap, and attendance of workmen on board Her Majesty's ship "Hector," Portsmouth Harbour, refixing the same to the slide.	– 9 5½	– 1 6	– 5 7	– 16 6½	– 19 –½
613—524	19 March 1868 13 March 1868. (57—2—17,535.)	Fitting the sights, and adjusting the side scales to a 64-pounder, and four 20-pounder B. L. guns on board Her Majesty's ship "Pandora."	1 4 6	- -	– 14 6	1 19 –	2 4 10
628—524	26 March 1868	Sending workmen to Her Majesty's ship "Bellerophon" at Spithead, for the purpose of taking a 9-inch 12-ton iron carriage and slide to pieces previous to being returned to store.	1 10 1	- -	– 17 9	2 7 10	2 14 10
632—524	30 March 1868 7 December 1867. (57—2—16,862.)	Cleaning and putting together the fittings of an 8-inch 9-ton, and a 7-inch 6½-ton carriage and slide on board Her Majesty's ship "Royal Oak," including the conveyance of artificers and labourers to and from the ship.	1 6 11	– – 10½	– 16 –	2 3 9½	2 10 2½
544—530	6 February 1868 5 February 1868. (57—2—17,253.)	Manufacturing a 20-pounder B. L. stern slide (for ships of the "Avon" class) of English oak, framed and fitted together with screw eye-bolts and nuts, raised upon a rear block made of elm, strengthened with two strong iron stays, secured with screw bolts and nuts, and fitted with gun-metal catch and flap for pivot, and iron brackets with loops for training purposes, including the forging, turning, and fitting complete the self-acting compressor arrangement; and forging, turning, and fitting one fighting bolt with three keys and chains. Also altering a bow slide by taking out and remaking two cross bars, one fitted with fighting bolt, the other to suit the position required for the traversing bolt. Raising two friction plates by adding blocks of wood one inch in thickness, for the purpose of giving more clearance from the platform, and rounding off the head of the slide to allow the necessary training, finishing, and painting both sides complete, and handing them over to the Military Store Department for transmission to Woolwich, to be sealed as patterns by the Ordnance Select Committee.	6 12 9	4 16 5¾	3 18 10	15 8 –¾	17 12 –¾
592—530	6 March 1868	Making working drawings with figured dimensions of the bow and stern 20-pounder slide (for ships of the "Avon" class), for guidance of future manufacture.	– 8 4	- -	– 4 11	– 13 3	– 15 5

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (F.) Miscellaneous Services—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
		Repairs for Commissariat Department:					
82—530 -	5 April 1867 - -	Repairing a bread wagon by forging and fitting on a new scroll iron, and forging and screwing one bolt and nut, and painting the new work.	- 7 5	- 1 2	- 4 3	- 12 10	- 14 10
91—530 -	9 April 1867 - -	Repairing a bread wagon by making one pair of new shafts, forging and screwing eight bolts, forging two iron stays and key for bolt of shafts.	1 1 4	- 2 2	- 12 8	1 16 2	2 1 6
95—530 -	16 April 1867 - -	Repairing a bread wagon by making one pair of ash shafts, and fitting the same with the old ironwork; forging and fitting two iron plates, one staple, one ring, one clip for spring, two split keys, and forging and screwing nine bolts and nuts.	1 10 2	- 3 10	- 18 8	2 12 8	3 - 6
140—530 -	16 May 1867 - - -	Repairing a bread wagon by forging and fitting one scroll iron, and forging and screwing five bolts and nuts for fixing the same to the wagon.	7 1	- 1 -	- 4 1	- 12 2	- 14 1
141—530 -	16 May 1867 - - -	Repairing the fore carriage of a bread wagon, including the forging and screwing of two bolts and nuts.	- 6 11	- - 1	- 4 -	- 11 -	- 12 9
151—530 -	22 May 1867 - - -	Making slight repairs to the fittings of two meat wagons - - -	5 10	- -	- 3 5	- 9 3	- 10 7
157—530 -	27 May 1867 - - -	Making a new front for a bread wagon and fixing it complete, including the forging of four angle irons, and forging and screwing 14 bolts and nuts; also repairing the footboard and apron.	1 6 5	- 2 8¼	- 15 9	2 4 10¼	2 11 5¼
182—530 -	13 June 1867 - - -	Repairing a meat wagon by forging and fitting two scroll irons, and repairing one scroll iron and bolts and nuts of the fore carriage; making new pillow bed, forging and screwing six bolts and nuts; forging iron thimble-ring for splinter-bar, and two split keys for the locking and drag bolts; making and fixing ventilator to the side of wagon; repairing the head, and painting the whole complete, ready for use.	2 7 8	- 7 1	1 8 3	4 3 -	4 15 2
193—530 -	18 June 1867 - -	Repairing a meat wagon by forging and fitting new iron to splinter-bar; forging and fitting one chain and two split keys; forging and screwing five bolts and nuts; forging and fitting one linch-pin and washer; repairing the footboard and top of wagon, and painting the new work.	- 11 8	- 8 11¾	- 6 10	1 7 5¾	1 11 5¾
196—530 -	20 June 1867 - - -	Repairing a bread wagon by forging and fitting one scroll iron; forging and screwing eight bolts and nuts; forging splinter-bar plate, one pillow plate with socket for locking bolt and three staples, and repairing three chains for the fore carriage; forging and screwing four bolts and nuts; making new spring block and chain guide; repairing two scroll irons and one bolt with nut for the hind carriage; repairing the ironwork of the two doors, and hanging same; hardening up all the bolts and nuts, and painting the new work.	1 12 2	- - 5¼	- 19 1	2 11 8¼	2 19 6¼

210—530	26 July 1867	Repairing a bread wagon by forging and screwing 12 bolts and nuts; forging two eyes for splinter-bar; forging and fitting one long bolt with chain and key for fixing the shafts to the carriage; forging and fitting chain and key for locking scroll iron, stay chains, door shutter, and painting complete.	1 6 2	– 1 6	– 15 6	2 3 2	2 9 6
216—530	3 July 1867	Repairing a wheel for a bread wagon, including new felloes, and bending, shutting, and re-shrinking on new tire.	– 19 1½	– 12 2	– 11 5	2 2 8½	2 8 11½
227—530	9 July 1867	Repairing a bread wagon, including the making of a pair of ash shafts, and forging and fitting all necessary ironwork for the same; making new splinter-bar with two eye-bolts and nuts; one chain and key for locking bolt; forging and fitting one long bolt for connecting the shafts to the carriage with key and chain; forging and screwing two bolts and nuts, and band with eye for securing the roof; repairing six bolts and nuts for futchells; re-lining the wagon with ¾-inch boarding; screwing up and making secure all bolts and nuts, and re-painting the whole ready for use.	1 19 4	– 18 7½	1 3 5	4 1 4½	4 13 2½
234—530	16 July 1867	Repairing a meat wagon by making of new felloes, and bending, shutting, and shrinking four new tires; forging and fitting two linch-pins and washers for axles; forging and fitting three thimble eyes for splinter-bar; forging and fitting a long bolt with key and chain for connecting the shafts to the carriage; forging and fitting new clip for spring; making new rave, new catch for doors, two chains and staples for the top, and covering the same with canvas bound with leather, and painting the whole complete.	2 17 6½	2 12 –	1 14 1	7 3 7½	8 5 4½
251—530	29 July 1867	Repairing a meat wagon by making and fitting new felloes to the four wheels, and bending the same with four iron tires, new ash shaft, and cross-bar; re-laying the arms of two axletrees; forging, turning, and fitting two new axle arms and four washers; forging and screwing four bolts and nuts for securing the springs; forging and fitting one eye and chain for splinter-bar, and one scroll iron, and re-setting two scroll irons; forging and fitting one plate and catch for the doors, and two staples for chain of doors; fixing the whole complete, ready for use.	4 7 6	2 14 –	2 11 10	9 13 4	11 2 2
276—530	7 August 1867	Repairing a meat wagon, including the forging and fitting of an iron hook for swingletree; forging and screwing two bolts and nuts for fastening irons to splinter-bar; forging and fitting four linch-pins and washers, repairing one spring and scroll iron, and painting the new work.	– 15 5	– 1 –	– 9 1	1 5 6	1 9 5
285—530	14 August 1867	Repairing a bread wagon by making a new splinter bar; forging and screwing 19 bolts and nuts; casting, turning, and fitting a metal bush, and plugging the same in box of wheels; forging and fitting two scroll irons, two stays for futchells, two linch-pins and washers, and iron for swingletree; one clip for splinter-bar and two split keys; re-laying the arms of two axletrees; repairing clip of spring; re-lining the body of wagon with ⅝-inch boarding; screwing up and securing all bolts, and painting ready for use.	2 19 6	– 11 5½	1 15 5	5 6 4½	6 1 11½

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (F.) Miscellaneous Services—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
296—530 -	22 August 1867 - -	Repairing a meat wagon by forging and fitting two clips for springs, one swingletree iron, two split keys, and two staples; forging and screwing two bolts and nuts, bending and shutting four new tires for the wheels; forging and fitting two linch-pins and washers, and one drag-hook; re-laying the arms of the axletrees; repairing eight clips for springs, and forging and screwing two bolts and nuts for the same; re-covering the top with canvas, and hanging it to the body; including the forging, fitting, and screwing of four hinges, and two bolts and nuts; making new footboard, and painting complete.	3 5 10½	2 5 4¼	1 19 2	7 10 4¾	8 12 3¾
308—530 -	29 August 1867 - -	Repairing a bread wagon by making new ash shafts and fitting them with the old ironwork; forging two hook eyes on the back band; forging and screwing two bolts and nuts; forging one thimble eye for splinter bar; forging and fitting one long bolt with key for connecting the shafts to the wagon; making six new felloes, and bending, shutting, and shrinking on new tires to wheels; repairing 10 bolts and nuts, and two springs, re-setting the hind scroll irons, hardening up all screw bolts and nuts, and painting complete.	3 14 11½	1 6 4¼	2 4 6	7 5 9¾	8 6 10¾
336—530 -	18 September 1867 -	Repairing a bread wagon by forging and fitting clip for spring of fore carriage, and forging and screwing bolts and nuts for the same; forging and fitting four eyes for splinter bar, one futchell, and one split key; making one new cross spring; forging and fitting hook for swingletree, and two eyes and plates for doors; making a new door, and fixing and painting the whole complete.	1 1 6	– 2 7	– 12 9	1 16 10	2 2 4
356—530 -	8 October 1867 - -	Repairing a meat wagon, including the making of new ash axle bed; forging, screwing, and fitting two clips for springs with four bolts and nuts; forging and screwing four bolts and nuts for couplings, and two shackles for springs; repairing two bolts and nuts, and strengthening the iron axletree.	1 19 –	– 9 11	1 3 1	3 12 –	4 2 7
366 - 530 -	14 October 1867 - -	Repairing a bread wagon by making 12 new felloes, and re-binding two wheels with new iron tires, including the binding, shutting, and shrinking the same; forging and screwing one bolt and nut; forging an iron plate and washer for axletree; binding the canvas cover with leather, and painting and finishing the wagon ready for use.	1 1 7	1 1 11	– 12 10	2 16 4	3 4 6
381—530 -	29 October 1867 - -	Repairing a meat wagon, including the forging and fitting two hinges with two bolts and nuts, and four rivets for doors; repairing one bolt and nut for same; repairing the floor, and painting the wagon complete.	– 14 5	– 2 –	– 8 6	1 4 11	1 8 7

392—530	6 November 1867	Repairing a bread wagon, including the making of one ash shaft; forging and fitting three iron plates; repairing four bolts and nuts, and ring of back stay.	– 11 9	– 2 11¾	– 6 11	1 1 7¾	1 5 –¾
400—530	12 November 1867	Repairing a bread wagon, including the forging and screwing of two bolts and nuts, and forging and fitting two couplings for springs; repairing swingletree and catch of door.	– 10 6	– 1 –	– 6 3	– 17 9	1 – 4
472—530	1 January 1868	Repairing a bread wagon by making a new ash shaft and swingletree; bending, shutting, and shrinking a new tire on wheel; forging four linch-pins; repairing one scroll-iron, one spring, and one iron key, and painting the new work.	– 18 9½	– 19 8½	– 11 2	2 9 8	2 17 –
475—530	2 January 1868	Making a new swingletree, including the forging and fitting of one hook and two eyes; painting and fixing it to a bread wagon.	– 4 8	– – 4	– 2 9	– 7 9	– 8 11
489—530	9 January 1868	Repairing a bread wagon by making new splinter-bar, forging and fitting swingletree plate, and forging and screwing six bolts and nuts, and one iron key; repairing swingletree iron, four plates, six bolts and nuts, and two eyes for the shafts; and painting complete, ready for use.	– 17 1	– 2 6	– 10 2	1 9 9	1 11 3
512—530	22 January 1868	Repairing two bread wagons, and one meat wagon, No. 2. No. 2 bread wagon.—Making new shut-lock, new splinter-bar, and pair of ash shafts; forging and fitting eight split keys, one linch-pin and washer; forging and screwing four bolts and nuts; repairing the doors, three bolts and nuts, two scroll-irons, two shackles, and one swingletree. No. 3 bread wagon.—One new pillow-bed, one carriage-bed, two futchells, two sweep-pieces, one ash-shaft; forging and fitting one long bolt with key for connecting shafts to wagon, two stays for futchells, two plates for pillow, one locking bolt, six keys with chains; forging and screwing 12 bolts and nuts, and forging and fitting two linch-pins; repairing six bolts and nuts, one eye for splinter-bar, five iron plates and four rivets. No. 2 meat wagon.—New bed pillow; forging and screwing eight bolts and nuts; forging and fitting one long bolt with chain and key for shafts, three clips for swingletree, and one for splinter-bar; one scroll-iron, and one locking-pin; fitting and fixing the new work, and painting the whole complete.	6 3 9	2 1 10¼	3 13 6	11 19 1¼	13 13 11¼
526—530	29 January 1868	Repairing a meat wagon, including the making of one pair of hinges, and repairing and refixing the cover; forging and fitting two split keys and chains; repairing the tail-doors, and re-laying the arms of axletree.	3 12 6	1 2 1	2 3 1	6 17 8	7 17 9
553—530	13 February 1868	Repairing a meat wagon, including the forging and fitting of one thimble eye, four split pins, two linch-pins and washers, one iron plate, and one bolt with key for connecting the shafts to wagon, and making two wood blocks for springs; repairing an iron axletree, four clips for springs, two springs, and six bolts and nuts, and fixing and painting the whole complete.	1 13 1	– 4 –½	– 19 8	2 16 9½	3 5 5½

No. 7.—Royal Ordnance Factories, Portsmouth—Statement (F.) Miscellaneous Services—*continued.*

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
554—530 -	13 February 1868 - -	Repairing a bread wagon, including the forging and screwing two bolts and nuts; repairing the roof and covering it with canvas repairing and re-hanging the doors, and painting ready for use.	2 1 1½	– 5 6	1 4 5	3 11 –½	4 1 5½
570—530 -	21 February 1868 - -	Repairing a meat wagon, including the bending, shutting, and shrinking on new tires to two wheels; forging and fitting four shackles for springs, four linch-pins and washers, and five split keys; forging and screwing eight bolts and nuts, cutting, re-shutting, and shrinking on an old iron tire; repairing four clips for springs, fitting and filing the above, and painting the wagon complete, ready for use.	3 18 3	– 13 –	2 6 7	6 17 10	7 18 1
583—530 -	29 February 1868 - -	Repairing a bread wagon by making a new ash shaft, and fitting the same with the ironwork of the old shaft; repairing eight bolts and nuts, one iron plate, and one back stay.	– 8 6½	– 5 3¾	– 5 2	– 19 –¼	1 1 9¼
612—530 -	18 March 1868 - -	Repairing a bread wagon, including the forging and fitting of three iron thimbles for splinter bar, two plates for futchels, four iron linch-pins and washers, and one split key; forging and screwing four bolts and nuts, and making one new swingletree; repairing ten bolts and nuts, one long pin for shaft, two scroll irons, and three plates.	1 18 1½	– 2 –	1 2 8	3 2 9½	3 12 –½
338—530 -	19 September 1867 - -	Repairing a meat wagon by forging and fitting two clips for springs, making two ash axle-beds, re-laying the arms of axletree; forging and fitting linch-pin and washer; forging and screwing five bolts and nuts, repairing the springs and S hooks, and painting complete	1 14 8	– 5 11	1 – 6	3 1 1	3 10 1
		Royal Marine Artillery.					
319—530 -	20 September 1867 - 23 August 1867. (54—Marines—2746.)	Repairing an ambulance wagon, including the making of new ash shafts and splinter bar; casting, turning, fitting, and plugging an iron box to one of the hind wheels; re-laying the arms of the axle-trees; forging and fitting two split keys, two linch-pins and washers; making new footboard; forging and splicing pins and chains; forging 15 rivets, and forging and screwing one bolt and nut for tailboard; repairing the canvas cover, and making new leather straps for the same; hardening up all bolts and nuts, trimming off the wheels, and painting the wagon throughout with two coats of paint.	7 3 1½	4 1 10¾	4 5 –	15 10 –¼	17 15 3¼

			Services for Colonial Governments.					
292—461 -	19 August 1867 - - (57—2—16,022.)	Making four metal flaps, pins, and brackets, four rear eccentrics, four sockets, four iron-pointed levers, four brackets for rear eccentrics, four split keys for eccentrics, four metal catches for flaps, four split keys for catches of flaps, four brackets for transporting axletrees, with fittings complete; forging, turning, and screwing four side loops with nuts for traversing, 32 $\frac{7}{8}$-inch bolts and nuts for fastening flap brackets, eight one-inch and 16 $\frac{3}{4}$-inch bolts for fastening eccentric brackets, two $\frac{1}{2}$-inch and two $\frac{5}{8}$-inch bolts for fastening flap catches; drilling four $1\frac{1}{8}$-inch holes to receive side loops, 16 $\frac{3}{4}$-inch holes to fasten on rear brackets, eight $\frac{1}{2}$-inch holes to fasten on rear brackets, eight $\frac{1}{2}$-inch holes, and squaring the same to receive axletree brackets; drilling and tapping four $\frac{1}{2}$-inch holes in front of slides for flap catches; enlarging 32 $\frac{3}{4}$-inch holes to $\frac{7}{8}$-inch for bracket bolts; cutting off four side loops from bollards and turning off the heads; casting on four lugs to preventor rope blocks and planing the sides; drilling four $\frac{3}{4}$-inch holes and shifting the blocks three inches further back; removing the old flap brackets and re-fixing the new, including the conveyance of artificers, labourers, tools, &c. to and from Her Majesty's colonial ship "Nelson," Portsmouth Harbour.	43 16 6	36 8 $1\frac{1}{4}$	26 – 11	106 5 $6\frac{1}{4}$	121 15 $7\frac{1}{4}$
52 and 116—526	15 February 1867 - - 30 April 1867.	Repairing the gun carriages of the royal yachts "Victoria and Albert" and "Osborne," including the taking to pieces of four 6-pounder mahogany carriages, cleaning, scraping, and French-polishing eight brackets, eight axletrees, four transoms, four beds, four coins, and 16 trucks; filing, polishing, and lacquering the metal work of the carriages, and fitting them together complete.	25 12 3	2 – $11\frac{1}{4}$	15 4 –	42 17 $2\frac{1}{4}$	49 2 $2\frac{1}{4}$
189—612 -	- - - -	Supplying the Royal Engineer department with 950 lineal feet of 2-inch by 8-inch timber, including the cost of removing to sawing machine and cutting into plank.	1 7 8	– 16 3	– 16 5	18 7 1	21 – 8
539 - -	- - - -	Cost of testing and proving ammunition, &c. during the year 1867–8	31 6 $1\frac{1}{2}$	12 7 $7\frac{1}{4}$	29 7 $7\frac{1}{2}$	73 1 $4\frac{1}{4}$	83 15 6
540 - -	- - - -	Cost of military instruction class for the year 1867–8 - - -	105 6 1	48 15 $10\frac{3}{4}$	- -	154 1 $11\frac{3}{4}$	170 3 8
541 - -	- - - -	Cost of converting timber from cube into plank for the year ended 31st March 1868.	44 1 $5\frac{1}{2}$	8 12 $-\frac{1}{2}$	- -	52 13 6	52 13 6
542 - -	- - - -	Cost of instructing naval artificers for the year ended 31st March 1868.	– 10 10	5 5 5	- -	5 16 3	5 16 3
		Total Miscellaneous Services - - -	1,106 19 $3\frac{1}{4}$	379 2 1	601 5 $8\frac{1}{2}$	2,087 7 $-\frac{3}{4}$	2,376 16 $-\frac{3}{4}$

Examined, *James C. Hurst*,
Accountant, and Auditor to Manufacturing Departments.

G. Fraser,
Superintendent.

No. 7.—Royal Ordnance Factories, Portsmouth—*continued.*

STATEMENT (G.)—ADDITIONS TO PLANT.

Number of Order.	Date of Requisition and Authority.	DESCRIPTION.	Number.	Labour.	Material.	Indirect Expenditure.	TOTAL COST per Balance Sheet, No. 1.	TOTAL COST per Balance Sheet, No. 2.
				£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
364—600	- - -	Cost of manufacturing a vice for preparing 7-inch M. L. R. shell for the two-prong shell extractor, including the making of patterns, casting, boring, screwing, and fitting a table with brackets for receiving the shell; casting, turning, and fitting a template for guiding the drill; casting, forging, turning, and screwing two wheels with screws for supporting and clamping the shell on centres, and fitting the whole complete to a drilling machine.	–	2 2 4½	– 8 7	1 5 2	3 16 1½	4 7 4½
600	- - -	Cost of erecting a self-acting 10½-inch screw-cutting lathe, including the fitting and fixing of counter shafting, with brackets, reversing gear, driving drums, and cleaning and putting the lathe together.	–	2 17 –	– 6 10½	1 13 10	4 17 8½	5 11 11½
341—600	- - -	Cost of manufacturing a letter press, with 120 divisions, fitted with three glazed sliding frames and four cupboards, and fixing same complete, including the painting, graining, and varnishing.	–	15 5 2	13 2 8¾	8 17 8¼	37 5 7	42 14 3
600	- - -	Cost of making the following implements for the manufacture of S. A. ammunition, including the casting, turning, boring, and stamping, complete:	–	3 5 9	– 16 11	1 19 –	6 1 8	6 19 4
		Moulds, with drifts for Terry cartridges - - - -	2	—	—	—	—	—
		Gauges - - - - - - - - - -	1	—	—	—	—	—
		Types, stereo - - - - - - - - -	3	—	—	—	—	—
		Formers, brass - - - - - - - - -	12	—	—	—	—	—
		„ boxwood - - - - - - - -	24	—	—	—	—	—
		Shoots for placing cartridges in W. P. bags - - - -	2	—	—	—	—	—
		Machine for cutting loops for tubes - - - - -	1	—	—	—	—	—
		Wrenches - - - - - - - - -	1	—	—	—	—	—
		Metal for staple - - - - - - - - -	1	—	—	—	—	—
		Total Additions to Plant - - - £.		23 10 3½	14 15 1¼	13 15 8¼	52 1 1	59 12 11

Examined, *James C. Hurst,*
Accountant, and Auditor to the Manufacturing Departments.

G. Fraser, Superintendent.

No. 7.—Royal Ordnance Factories, Portsmouth—*continued.*

(H.)—CAPITAL ACCOUNT of the Royal Ordnance Factories, Portsmouth, 1867–8.

Dr.

	£. s. d.	£. s. d.
To Balance:		
For Value of Land, Buildings, &c. on 1st April 1867, viz.:		
Land - - - - - - - - -	2,693 2 6	
Buildings - - - - - - - -	20,615 9 3½	
Machinery and miscellaneous plant - -	5,872 18 -¾	
		29,181 9 10
To Army Supplies:		
For Amount expended during the Year 1867–8, viz.:		
Buildings - - - - - - - -	690 3 –	
Machinery and miscellaneous plant - -	201 5 –	
		891 8 –
To Production Account:		
For Machinery and miscellaneous plant added in the Department during 1867–8 - - -	- - -	52 1 1
To Store Account:		
For Miscellaneous plant issued from Store during 1867–8 - - - - - - - - -	- - -	93 11 7
	£.	30,218 10 6

Cr.

	£. s. d.	£. s. d.
By Production Account, 1867–8:		
For One Year's Depreciation, viz.:		
5 per Cent. on Buildings (20.615 *l.* 9 *s.* 3¼ *d.*), per contra - - - - - - - - -	1,030 15 5½	
10 per Cent. on Machinery, (5,872 *l.* 18 *s.* -¾ *d.*), per contra - - - - - - - - -	587 5 9½	
		1,618 1 3
By Balance:		
For Value of Land, Buildings, Machinery, &c. on 31st March 1868; viz.:		
Land - - - - - - - - -	2,693 2 6	
Buildings - - - - - - - -	20,274 16 9¾	
Machinery and Miscellaneous plant - -	5,632 9 11¼	
		28,600 9 3
	£.	30,218 10 6

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

G. Fraser, Brevet Major, R. A.,
Superintendent.

— No. 8. —

ROYAL LABORATORY, DEVONPORT.

(A.)—BALANCE SHEET, No. 1, of the Royal Laboratory Department, Devonport, for the Year 1867–8.

Dr.

	£.	s.	d.	£.	s.	d.
To Balance:						
For Stores in Stock on 1st April 1867 -	-		-	3,378	12	10½
To Army Supplies, 1867–8—For Cash advanced through the Paymaster General, and expended on the following Services during the Year ended 31st March 1868:						
Salaries - - - - - - -	371	5	–			
Establishment for Instruction - -	36	7	1½			
Wages - - - - - - -	6,409	16	5			
Sick Pay - - - - - -	101	16	5½			
Miscellaneous Services - - -	112	13	11			
Stores and Materials - - -	2,084	4	11			
New Buildings - - - -	1,482	–	–			
Repairs to Buildings - - -	327	6	5¼			
New Machinery - - - -	241	–	–			
Medical Expenses - - - -	45	3	11			
Police - - - - - - -	487	7	11			
Divine Service - - - -	125	–	–			
Schools - - - - - -	130	8	6			
Military Pay - - - - -	331	6	6			
Superannuation - - - -	62	7	9			
				12,348	4	10¼
To Miscellaneous Services, 1867–8—For Expenditure not defrayed out of Army Supplies:						
Stationery - - - - - -	-		-	33	1	1¼
To Sundry Departments—For Stores, &c. received from various Sources - -	-		-	4,591	6	3
To Capital Account—For value of Proof House, &c., destroyed by Fire - -	-		-	94	10	6¾
			£.	20,445	15	7¾

Cr.

	£.	s.	d.	£.	s.	d.
By Balance:						
For Stores in Stock on 31st March 1868 - - - - - -	-		-	2,943	3	7
By Capital Account:						
For New Buildings added during the Year 1867–8 - - - -	1,482	–	–			
For New Machinery added during the Year 1867–8 - - -	241	–	–			
For Miscellaneous Plant issued from Store during the year 1867–8 -	154	17	11¼			
				1,877	17	11¼
By Production Account:						
For Articles Manufactured during the Year 1867–8, as per Statement (C.) - - - - - -	6,832	19	11			
For Miscellaneous Services performed during the Year 1867–8, as per Statement (D.) - - -	7,865	5	6¾			
For Miscellaneous Plant added in the Department during the Year 1867–8, as per Statement (E.) -	37	15	6¾			
				14,736	1	–½
By Sundry Departments:						
For Stores, &c. issued during the Year 1867–8, to various Sources -	-		-	888	13	1
			£.	20,445	15	7¾

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

E. Keate, Captain, R. A.,
Assistant Superintendent.

No. 8.—Royal Laboratory, Devonport—*continued.*

(B.)—BALANCE SHEET, No. 2, of the Royal Laboratory Department, Devonport, for the Year 1867-8.

Dr.

	£. s. d.	£. s. d.
To Balance:		
For Stores in Stock on 1st April 1867 -	- -	3,378 12 10½
To Army Supplies, 1867-8:		
For Cash advanced through the Paymaster General, and expended on the following Services during the Year ended 31st March 1868:		
Salaries - - - - - -	371 5 –	
Establishment for Instruction -	36 7 1½	
Wages - - - - - -	6,409 16 5	
Sick Pay - - - - - -	101 16 5½	
Miscellaneous Services - -	112 13 11	
Stores and Materials - - -	2,084 4 11	
New Buildings - - - -	1,482 – –	
Repairs to Buildings - - -	327 6 5¼	
New Machinery - - - -	241 – –	
Medical Expenses - - - -	45 3 11	
Police - - - - - -	487 7 11	
Divine Service - - - -	125 – –	
Schools - - - - - -	130 8 6	
Military Pay - - - -	331 6 6	
Superannuation - - - -	62 7 9	
		12,348 4 10¼
To One Year's Interest, at 3½ per Cent., on Invested Capital, viz.:		
Stores in Stock on 1st April 1867 - £. 3,378 12 10½		
Buildings - - £. 24,294 15 2		
Machinery and Plant £. 5,212 16 7¼		
Land - - - £. 2,175 – –		
Total - - £. 35,061 4 7¾	1,227 2 10	
To One Year's Interest, at 3½ per Cent., on Working Capital, viz., one-fifth of Annual Expenditure - - - -	118 15 11	
To Depreciation, 5 per Cent. on Buildings, and 10 per Cent. on Machinery, as per Capital Account - - - - -	1,736 – 5	
		3,081 19 2
To Miscellaneous Services, 1867-8:		
For Expenditure not defrayed out of Army Supplies:		
Stationery - - - - - -	- -	33 1 1¼
To Sundry Departments:		
For Stores, &c. received from various Sources - - - - - - -	- -	4,591 6 3
To Capital Account:		
For value of Proof Houses, &c., destroyed by Fire - - - -	- -	94 10 6¾
Total - - - - £.		23,527 14 9¾

Cr.

	£. s. d.	£. s. d.
By Balance:		
For Stores in Stock on 31st March 1868 - - - - - -	- -	2,943 3 7
By Capital Account:		
For New Buildings added during the Year 1867-8 - - - -	1,482 – –	
For New Machinery added during the Year 1867-8 - - -	241 – –	
For Miscellaneous Plant issued from Store during the Year 1867-8 -	154 17 11¼	
		1,877 17 11¼
By Production Account:		
For Articles Manufactured during the Year 1867-8, as per Statement (C.)	8,299 17 7	
For Miscellaneous Services performed during the Year 1867-8, as per Statement (D.) - - - -	9,472 4 10¾	
For Miscellaneous Plant added in the Department during the Year 1867-8, as per Statement (E.) -	45 17 8¾	
		17,818 – 2½
By Sundry Departments:		
For Stores, &c. issued during the Year 1867-8 to various sources -	- -	888 13 1
Total - - - £.		23,527 14 9¾

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

E. Keate, Captain, R.A.,
Assistant Superintendent.

No. 8.—ROYAL LABORATORY, DEVONPORT—*continued.*

STATEMENT (C.)—STORES Manufactured in the ROYAL LABORATORY DEPARTMENT, DEVONPORT, during the Year 1867-8.

Working Number.	Date of Order or Requisition.	DESCRIPTION.	Number.	Labour.	Materials.	Indirect Expenditure.	Total per Balance Sheet No. 1.	Interest and Depreciation.	Total per Balance Sheet No. 2.
				£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
		Bags:							
E 22	1 June 1867 - - - -	Blue, flannel, for S. A. ammunition, for 15 cartridges - - - - - -	6	– 1 9	– – 11½	– 1 5¾	– 4 2¼	– – 11	– 5 1¼
85	11 April 1867 and 6 July 1867 -	White, flannel, to hold 15 lbs. of powder -	3,730	11 8 5	142 13 3½	9 11 11	163 13 7½	35 3 8	198 17 3½
		Cartridges, Small Arm:							
10 & 37	29 March, 3 and 16 April 1867 -	Blank { Common - - - 3½ drams	2,000,000	210 18 11	1,346 15 3	179 17 5¼	1,737 11 7¼	372 19 7	2,110 11 2¼
		Blank { Pistol - - - 2 „	7,000						
36	3 and 16 April and 31 May 1867	Ball, Art. Carbine - - - 2 „	1,900,630	475 4 6	3,159 9 5¾	405 5 –	4,039 18 11¾	867 3 7	4,907 4 6¾
		Cartridges, Empty:							
12 & 15	29 March and 11 April 1867 -	Flannel, M. L. R., 9 inch, 12 tons, 43 lbs.	740	59 9 11¼	550 6 5	50 14 –¼	660 10 4½	141 16 –	802 6 4½
		Flannel, M. L. R., 9 inch, 12 tons, 30 „	335						
	13 August and 23 Sept. 1867 -	Flannel, M. L. R., 8 inch, 9 tons, 30 „	3,790						
	1 May and 9 May 1867 -	Flannel, M. L. R., 8 inch, 9 tons, 20 „	2,290						
	24 June and 23 July 1867 -	Flannel, M. L. R., 8 inch, 9 tons, 12 „	930						
	6 July and 13 August 1867 -	Flannel, 7 inch, 6½ tons, 22 „	2,720						
	23 Sept. and 2 December 1867 -	Flannel, 7 inch, 6½ tons, 14 „	1,756						
	12 February 1868 - - -	Flannel, 7 inch, 6½ tons, 10 „	740						
		Flannel, B. L. R. 12 pr., 1 lb., Patt. II. -	500						
13	29 March 1867 - - -	Calico, bursters, diaphragm - 70 drams	300	– 9 2½	– 6 3½	– 7 10	1 3 3¾	– 5 –	1 8 3¾

14 & 29	29 March and 11 April 1867 - 24 Sept. and 17 Oct. 1867 - 13 Feb. and 27 Feb. 1868 - 16 March 1868 - - -	Cartridges, filled, Dummy, for Drill: Charge - M. L. R. 64-pounder - 8 lbs.	12	1 11 2¼	5 17 11	1 6 7	8 15 8½	1 17 8	10 13 4¼
		6 „	12						
		S. B. 100 „ 20 „	12						
		68 „ 16 „	50						
		32 „ 10 „	80						
		8 „	2						
		4 „	60						
		24 „ 8 „	12						
		18 „ 6 „	4						
		Bursters - - 24 „ 40 drams	2						
		Diaphragm 50 „	2						
38	14 February 1868 - - -	Case, packing, for life-saving rocket apparatus	1	- 2 6	- 6 10½	- 2 1½	- 11 6	- 2 6	- 14 -
23	20 June 1867 - - - -	Funnels, leather, common, large - - -	4	- 8 9	- 8 8	- 7 5¼	1 4 10¼	- 5 6	1 10 4¼
74	11 April and 6 July 1867 - -	Lanyards, friction, tube, S. S. - - -	2,000	26 10 9	15 1 3¼	22 12 5	64 4 5¼	13 15 8	78 - 1¼
	6 March 1867 - - -	Ditto ditto ditto (in part) - -	200	1 15 -	- 5 10	1 9 10	3 10 8	- 15 9	4 6 5
125	1 April 1867 - - - -	Puffs, for proof - - - - - - -	244	- 1 3	- - -	- 1 -¾	- 2 3¾	- - 6	- 2 9¾
E 75	11 April and 23 Sept. 1867 -	Levers for brass cases, universal pattern - -	300	19 9 7½	10 11 3½	16 12 1	46 13 -	10 - 7	56 13 7
28 & 80	11 April, 3 Sept., 6 July, and 8 August 1867 - - -	Sticks, rocket, signal - - - 1 lb. -	607	6 6 -	5 3 9¾	5 7 4	16 17 1¾	3 13 -	20 10 1¾
25	15 July 1867 - - - -	½ „	43	- 9 -	- 5 6	- 7 8	1 2 2	- 4 10	1 7 -
82	29 March 1867 - - -	Tubes, dummy, for drill - - - -	20	4 10 7½	- 3 6	3 17 3	8 11 4½	1 16 9	10 8 1½
83	11 April and 23 Sept. 1867 -	Wads, coal dust, for 8-inch S. B. 5 lb. cartridges	2,700	12 13 3¼	47 15 6	10 15 10	71 4 7¼	15 6 -	86 10 7¼
84	11 April 1867 - - - -	Wrenches, for metal powder cases - - -	150	2 14 9	1 18 8	2 6 8	7 - 1	1 10 2	8 10 3
		TOTALS - - - £.		834 5 5¼	5,287 10 6	711 3 11¾	6,832 19 11	1,466 17 8	8,299 17 7

Examined,
James C. Hurst,
Accountant, and Auditor to Manufacturing Departments.

E Keate, Captain, R.A.,
Assistant Superintendent.

No. 8.—ROYAL LABORATORY, DEVONPORT—*continued.*

STATEMENT (D.)—MISCELLANEOUS SERVICES performed in the ROYAL LABORATORY DEPARTMENT, DEVONPORT, during the Year 1867–8.

Working Number.	DESCRIPTION.	Number.	Labour.	Materials.	Indirect Expenditure.	Total per Balance Sheet, No. 1.	Interest and Depeciration.	Total per Balance Sheet, No. 2.
	Repairing Stores returned from Her Majesty's Ships, as follows:—							
E. 1	Leopard (1 order), Buzzard (1), Prince Albert (2), Cambridge (6), Jackal (2), Nightingale (1), Lord Clyde (2), Ocean (1), Caledonia (2), Achilles (4), Gibraltar (1), Vixen (2), Ruby (2), Earnest (1), Pantaloon (1), Clinker (2), Royalist (1), Vestal (1), Pallas (2), Steady (1), Terrible (1), Donegal (1), Liverpool (2), Canopus (3), Fervent (1), Liffey (1), Indus (1), Lion (1), Phœbe (1), Princess Royal (1), Black Prince (1), Valorous (1), Sandfly (1), Triton (1), Bellerophon (1), Aurora (1), Prince Consort (2), Royal Adelaide (1), Impregnable (1). - - - - - - - - - - - -	- -	£. s. d. 913 14 10¾	£. s. d. 81 2 4	£. s. d. 779 – 11	£. s. d. 1,773 18 1¾	£. s. d. 380 13 9	£. s. d. 2,154 11 10¾
	Performing Miscellaneous Work for Deputy Superintendent of Stores, Bull Point:—							
2 and 73	Selecting, packing, and repacking ammunition and combustible stores; packing stores for Cork Harbour; rewebbing cartridges; painting heads of barrels; baling cartridges; removing plugs from shells; fitting packing cases for various stores; lettering powder waggons; putting shells in boxes; withdrawing caps; repairing jetty lamps; shifting powder; repairing watering pots, shovels, copper, &c.; pasting labels on rockets; cleaning cases; issuing and receiving stores -	- -	393 5 9	53 13 2¾	335 6 –	782 4 11¾	167 17 7	950 2 6¾
	Repairing; converting for Military Stores Department:—							
3	Breaking down small arm and flannel gun cartridges and mortar cartridges; repairing boxes, ammunition, and tin; cases, tin, and rods for wood bottoms, &c. - - - - - - - - - - - - - -	- -	62 10 9½	2 12 5¾	53 6 11	118 10 2¼	25 8 7	143 18 9¼
	Examining Stores returned from Regiments:—							
4	From Devon and Cornwall Rifle and Artillery Volunteers; Royal Artillery, Western District; Royal Marines; Royal Engineers; 12th, 17th, 20th, and 40th Regiments; Somerset Militia; Coast Guard; Pensioners; Miners' Militia Artillery; 1st Devon Militia; Devon Militia Artillery; 2nd Devon Militia; 2nd battalion Rifle Brigade; Cornwall Rangers Militia, &c. - - - -	- -	70 8 5	– 8 7½	60 1 2	130 18 2½	28 1 9	158 19 11½

	Packing; selecting Stores for Her Majesty's Ships:—																			
5	Phœbe (10 orders), Liffey (11), Dryad (8), Racoon (2), Vestal (2), Prince Albert (13), Lord Warden (9), Vixen (13), Ganges (3), Implacable (6), Excellent (1), Canopus (6), Daphne (8), Caledonia (3), Cambridge (28), Rattlesnake (5), Terrible (2), Pallas (4), Northumberland (1), Fervent (2), Dædalus (2), Niobe (1), Jumna (3), Indus (4), Euphrates (1), Squirrel (2), Impregnable (3), Donegal (3), Royal Adelaide (4), Clinker (1), Defence (7), Fox (1), Highlander (1), Buzzard (2), Royal George (1), Nymph (1), Lion (3), Harpy (3), Sealark (1), St. George (1), Redwing (1), Liverpool (3), Britannia (1), Newport (3), Vivid (1), Bellerophon (3), Himalaya (1), Achilles (5), Penelope (1), Lapwing (3), Gnat (4), Flirt (3), Fly (4), Lynx (4), Pert (4), Growler (4), Midge (4), Hart (4), Waterwitch (3), Prince Consort (2), Ferret (1), Seagull (1), and 14 gunboats - - - - - - - - - - - -	-	-	198	3	3½	12	4	4¾	168	19	1	379	6	9½	81	8	2	460	14	11¼
	Packing; selecting for Regiments:—																			
6	For Devon and Cornwall Rifle and Artillery Volunteers; Royal Artillery; Coast Guard; Pensioners; Cornwall Rangers Militia; 12th, 20th, and 40th Foot; Devon Yeomanry Cavalry; 1st Devon Militia; Devon Artillery Militia; Royal Marines; South Devon Militia; 2nd battalion Rifle Brigade; Cornwall Miners Artillery Militia; 1st and 2nd Gloucester Rifle Volunteers; 1st and 2nd Somerset Militia; Military Train, Police, Royal Engineers, &c. - - -	-	-	103	13	4	8	17	5¾	88	7	8	200	18	5¾	43	2	8	244	1	1¾
	Packing, selecting, &c., Stores for Regiments on Repayment:—																			
7	For Devon and Cornwall Rifle and Artillery Volunteers - - - - - -	-	-	3	19	10½	–	6	7	3	8	2	7	14	7½	1	13	3	9	7	10½
	Examining Stores returned from Her Majesty's Ships:—																			
8	Sealark (2), Prince Consort (2), Royalist (1), Racoon (1), Prince Albert (5), Liberty (2), Ganges (1), Vestal (1), Royal Adelaide (4), Charybdis (1), Caledonia (2), Lord Clyde (1), Implacable (4), Cambridge (2), Canopus (4), Donegal (4), Pallas (4), Phœbe (2), Squirrel (3), Dryad (1), Terrible (1), Liverpool (3), Steady (1), Dædalus (1), Fervent (2), Daphne (3), Fox (1), Impregnable (2), Liffey (2), Clinker (2), Princess Royal (1), Indus (1), Lion (4), Vixen (2), Black Prince (2), Valorous (1), Harpy (1), Sandfly (1), Triton (1), Chance (1), Aurora (1), Achilles (1), Bellerophon (1), Defence (1), Waterwitch (1); and Nimble (1) - - - - - - - - - -	-	-	364	14	4½	6	10	4½	310	19	2	682	3	11	146	3	5	828	7	4
	Examining Stores in charge of Military Store Department:—																			
9	Stores from Woolwich, shot lead, packing stores after manufacture, repair, &c. -	-	-	101	9	3	28	14	10¾	86	11	1	216	15	2¾	46	10	3	263	5	5¾
	Repairing Stores returned from Regiments:—																			
16	From Devon and Cornwall Rifle and Artillery Volunteers; Royal Marines, 65th 12th, 13th, 17th, 20th, 40th, and 80th Regiments; Coast Guard; Royal Artillery; Dorset Artillery Volunteers; Miners' Militia; 2nd Devon Militia; Miners' Militia Artillery; Military Train; Rifle Brigade, &c. &c. - - - -	-	-	19	9	9	2	15	8¼	16	12	2	38	17	7¼	8	7	–	47	4	7¼

No. 8.—Royal Laboratory, Devonport—Statement (D.) Miscellaneous Services performed in the Royal Laboratory Department, Devonport, during the Year 1867-8—*continued.*

Working Number.	DESCRIPTION.	Number.	Labour.	Materials.	Indirect Expenditure.	Total per Balance Sheet, No. 1.	Interest and Depreciation.	Total per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
17	Filling Shells, including Fitting with appropiate Fuzes - - - - - - M. L. R. 9-inch - Common	1,023	103 19 5½	– 11 1¾	88 12 8	193 3 3¼	41 9 –	234 12 3¼
	M. L. R. 9-inch - Palliser's	220						
	M. L. R. 8 „ Common	600						
	M. L. R. 8 „ Palliser's	690						
	M. L. R. 7 „ Common	1,270						
	M. L. R. 7 „ Double	340						
	M. L. R. 7 „ Palliser's	690						
	M. L. R. 64-pounder Common	1,360						
	B. L. R. 12 „ Segment	1,040						
	B. L. R. 9 „ „	70						
	S. Bore 24 „ Common	50						
	S. Bore 12 „ „	150						
18	Repairing Cartridge, Half Barrels - - - - - - - - - - -	168	3 8 1	2 12 3	2 18 –	8 18 4	1 18 3	10 16 7
19	Ditto - ditto - Quarter Barrels - - - - - - - - - -	1,880	20 – 3½	14 6 7¾	17 1 2	51 8 1¼	11 – 8	62 8 9¼
20	Emptying Shells, including withdrawing and cleaning Fuzes, &c. - - - - - - M. L. R. Common 9-inch -	310	25 1 3½	– – 11	21 7 3	46 9 5½	9 19 6	56 8 11½
	M. L. R. Common 7 „ -	761						
	M. L. R. Common 64-pounder	284						
	B. L. R. Segment 12 „ -	50						
21	Converting Shell Boxes for samples, from obsolete natures, viz.: - - - - - - - - 13-inch - 6 / 7 „ B. L. 4 to 7-inch	3	1 6 6	– 12 8¼	1 2 7	3 1 9¼	– 13 4	3 15 1¼
	8 „	2						
	9 „	3						
24	Repairing Tanned Hides for Military Store Department - - - - - -	22	4 4 9	4 7 1¾	3 12 3	12 4 1¾	2 13 4	14 17 5¾
26	Repairing Glass broken in Department by accident, for Royal Engineer Department - -	-	– 11 –	– 16 11	– 9 5	1 17 4	– 8 1	2 5 5
27	Converting Shell Boxes from obsolete natures into N. P. 7-inch B. L. R. 490 / 13 „ S. B. - 257 to 7-inch - Common	286	54 5 6½	45 16 2¼	46 6 –	146 7 8¾	31 8 4	177 16 –¾
	7-inch - Double	121						
	9 „ Common	37						
	8 „ „	219						
	8 „ Palliser's	2						

30	Altering Fuzes to latest Pattern, and making Bags for Dyer's C. Percussion -	3,200	18 9 8½	1 11 6¾	15 15 1	35 16 4¼	7 13 8	43 10 -¼
31	Converting two Congreve Rocket Sticks into Life-Saving Apparatus Rocket Sticks	2	- 1 -	- -	- - 10¼	- 1 10¼	- - 8	- 2 6¼
32	Fitting Shells for Fuzes, screwing in Adapters, Fitting for G. S. Bush; re-adapting; altering to take N. P. Extractor; Wads fixed in Fuze Holes, &c. &c. - -	- -	69 6 1½	5 4 9¼	59 2 2	133 13 -¾	28 13 -	162 6 -¾
33	Watching Government Property at Bull Point, and furnishing a Boat's Crew to guard "Conquestador" - - - - - - - - - - - -	- -	18 12 3	- -	15 18 1	34 10 4	7 8 2	41 18 6
34	Re-gauging Shells before issue to H. M. Ships - - - - - - - -	933	2 12 6	- -	2 4 9	4 17 3	1 - 11	5 18 2
39	Cleaning, Lacquering and Piling Shells, ready for issue for Military Store Department - - - - - - - - M. L. R. 64-pounder Common	3,864	250 17 5½	17 6 3	213 18 4	482 2 -½	103 9 -	585 11 -½
	M. L. R. 7-inch - "	3,210						
	M. L. R. 7-inch - Double	678						
	M. L. R. 7-inch - Palliser's	840						
	M. L. R. 8 " Common	1,300						
	M. L. R. 8 " Palliser's	2,321						
	M. L. R. 9 " Common	1,709						
	M. L. R. 9 " Palliser's	1,345						
	B. L. R. 40-pounder Common	430						
	B. L. R. 12 " Segment	1,800						
	B. L. R. 9 " "	536						
40	Experimental Service:—To find out the actual quantity of serge, braid, worsted, &c., to make 100 of six natures of cartridges - - - - - - - -	- -	- 6 6	- -	- 5 6½	- 12 -½	- 4 6	- 16 6½
42	Repairing Barrels, common, whole - - - - - - - - - - -	6,350	117 12 3	31 8 5¾	100 6 5	249 7 1¾	53 13 4	303 - 5¾
44	Repairing Cases - - - - - - - - Pentagon - Whole -	855	87 12 9	28 2 7	74 14 7	190 9 11	40 17 8	231 7 7
	Pentagon - Half -	43						
	Rectangular - - -	514						
	Corrugated - - -	37						
	Dell's Hexagon, Whole -	80						
45	Ditto - and Converting Packing Cases - - - - - - - -	185	14 12 6	6 - 5⅜	12 9 4	33 2 3⅜	7 3 7	40 5 10⅜
53	Ditto - Cases, Metal lined - - - - - - - - - Whole -	1,260	91 16 10½	23 18 7¼	78 6 2	194 1 7¾	41 11 9	235 13 4¾
	Ditto - Cases, Metal lined - - - - - - - - - Half -	610						
	Ditto - Cases, Metal lined - - - - - - - - - Quarter	275						

No. 8.—Royal Laboratory, Devonport—Statement (D.) Miscellaneous Services performed in the Royal Laboratory Department, Devonport, during the Year 1867-8—*continued.*

Working Number.	DESCRIPTION.	Number.	Labour.	Materials.	Indirect Expenditure.	Total per Balance Sheet, No. 1.	Interest and Depreciation.	Total per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
60 & 61	Converting Cartridges from Obsolete Natures into New Pattern, from:							
	Gun, B. L. R. 7-inch 12 lbs. 0 oz. 2,400 to 7-inch B. L. R. Gun 11 lbs. 0 oz.	2,400						
	Gun, B. L. R. 40-pr. S. S. 5 0 340 „ 40-pr. „ „ L. S. 5 0	340						
	Gun, S. Bore 32 „ 7 0 1,520 „ S. B. Gun, 18-pr. 4 0	1,520						
	Gun, S. Bore 32 „ 5 0 600 „ S. B. Mortar, 8-in. 3 0	600						
	Gun, S. Bore 56 „ 16 0 300 „ S. B. Mortar, 8-in. 2 0	550						
	Gun, S. Bore 32 „ 10 0 2,110 „ M. L. R. Gun, 64-pr. 8 0	2,110						
	Gun, S. Bore 56 „ 14 0 390 „ M. L. R. Gun, 64-pr. 6 0	390						
	Howitzer „ 12 „ 1 4 120 „ S. B. Howitzer, 12 „ 1 0	120						
	Mortar - - - 4 8 5,000 „ S. B. Gun, 32 „ 4 0	10,000						
	Mortar - - - 8 0 2,000 „							
	Mortar - - - 7 0 3,000 „							
	S. Bore Gun 32-pr. 10-in. 12 0 5 „							
	S. Bore Gun 32-pr. 68-pr. 16 0 6 „							
	S. Bore Gun 32-pr. 32 „ 8 0 4 „							
	S. Bore Gun 32-pr. 32 „ 7 0 78 „							
	S. Bore Gun 32-pr. 32 „ 6 0 5 „							
	S. Bore How. 12 „ 1 8 24 „							
	S. Bore Crnd. 18 „ 1 8 11 „							
	S. Bore Gun. 10-in. 12 0 300 S. B. Gun - 6 „ 0 4	300						
	S. Bore Gun. 56-pr. 10 0 340 M. L R. Gun, 64-pr. 6 0	340	84 19 1½	62 16 3	72 8 10	220 4 2½	47 5 6	267 9 8½
	Bursters, Calico, 0 13 200 „ Bursters, 12-pounder, 0 9½	200						
	Gun - B. L. 12-pr. Pat. I. 1 0 1,122 „ B L. R. 12-pounder, Pattern II. 1 0	1,122						
	Gun - B. L. 40 „ „ 5 0 1,195 „ B L. R. 12 „ 1 8	386						
	Gun - B. L. 40 „ „ 5 0 1,195 „ B L. R. 9 „ 1 2	769						
	Gun - S. B. 3-pr. - 1 0 34 „ S. B. - 3 „ 0 12	34						
	Gun - S. B. 32 „ - 3 0 500 „ S. B. - 18 „ 2 0	1,300						
	Gun - S. B. 32 „ - 2 0 800 „							
	Gun - S. B. 8 0 4,100 „ B. L. R. 12 „ 1 8	4,100						
	Gun - S. B. 8 0 4,100 „ S. B. - 6 „ 0 4	4,100						
	Mortar 13-inch - - 2 0 660 „ S. B. - 9 „ 1 0	660						
	Gun, 7-inch B. L. R. - 8 0 560 „ B. L. R. - 7-inch - 7 10	560						
	Gun, 7-inch B. L. R. - 3 0 560 „ B. L. R. - 7-inch - 3 2	560						

62 & 63	Filling Flannel Cartridges, and Packing, &c., in Cases.	S. Bore	Mortar			2	0	400	188	6	4½	24	10	1	160	11	4	373	7	9½	80	2	8	453	10	5½
						0	8	20																		
			Gun	8-inch		8	0	1,620																		
						5	0	2,192																		
				32-pounder		5	0	1,012																		
						4	0	8,046																		
				18-pounder		2	0	500																		
				9-pounder		1	0	600																		
				6-pounder		2	0	200																		
						1	0	1,021																		
						0	4	11,772																		
				3-pounder		0	12	34																		
			Howitzer	12-pounder		1	4	2,000																		
			Bursters	Diaphragm		70 drs.		300																		
		M. L. R.	Gun	9-inch		43 lbs.		664																		
						30	„	464																		
						15	„	30																		
				8-inch		30	0	2,712																		
						20	0	1,840																		
						12	0	287																		
				7-inch		22	0	3,060																		
						14	0	3,487																		
						10	0	480																		
				64-pounder		8	0	3,130																		
						6	0	1,682																		
		B. L. R.		40-pounder		5	0	655																		
				12-pounder		1	8	4,932																		
						1	0	1,157																		
				12-pounder bursters		0	9½	108																		

No. 8.—Royal Laboratory, Devonport—Statement (D.) Miscellaneous Services performed in the Royal Laboratory Department, Devonport, during the Year 1867–8—*continued.*

Working Number.	DESCRIPTION.	Number.	Labour.	Materials.	Indirect Expenditure.	Total per Balance Sheet, No. 1.	Interest and Depreciation.	Total per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
70	Military class of instruction	- -	111 15 10½	1 7 7¼	- -	113 3 5¾	- -	113 3 5¾
78·9	Proving gunpowder in store, and returned from ships, &c., caps, fuzes, lights, tubes, &c.	- -	198 2 9	112 14 11¼	168 19 1	479 16 9¼	82 14 –	462 10 9¼
86	Repairing powder platforms or tramway, and powder rooms for Royal Engineer Department	- -	54 3 1½	16 9 5¾	46 3 2½	116 15 9¾	25 – 9	141 16 6¾
87	Filling flannel bags with powder	- -	15 4 11	– 15 5	12 19 10	29 – 2	6 5 7	35 5 9
88	Repairing tube boxes, wood and copper lined	115	4 13 3½	1 12 6½	3 19 6	10 5 4	2 4 1	12 9 5
89	Converting wood tube boxes (174) into packing cases	174	7 10 3	– 19 11	6 8 –	14 18 2	3 4 –	18 2 2
90	Repairing zinc cylinders, of sorts	1,100	7 1 11	– 14 9	6 – 9	13 17 5	3 – –	16 17 5
120	Breaking down Congreve rockets, and extracting saltpetre	- -	23 6 9	– 3 1½	19 17 8	43 7 6½	9 6 3	52 13 9½
121	Converting adapters, old pattern, into general service	15,962	28 14 9	– 1 4¾	24 9 9	53 5 10¾	11 8 10	64 14 8¾
126	Laying pipes to heat shifting house for Royal Engineer Department	- -	21 10 10½	33 7 -⅝	18 7 2	73 5 1⅛	15 14 6	88 19 7⅛
	Proportion of expense of schools and clergyman, incurred on account of other departments	- -	170 5 8	- -	- -	170 5 8	- -	170 5 8
	Totals - - - £.		4,032 2 2¾	635 15 2¾	3,197 8 1¼	7,865 5 6¾	1,606 19 4	9,472 4 10¾

Examined,

James C. Hurst,
Accountant, and Auditor to Manufacturing Departments.

E. Keate, Captain, R.A.,
Assistant Superintendent.

No. 8.—Royal Laboratory, Devonport—*continued.*

STATEMENT (E.)—Additions to Plant, &c., in the Royal Laboratory Department, Devonport, during the Year 1867–8.

Work Number.	DESCRIPTION.	Number.	Labour.	Materials.	Indirect Expenditure.	Balance Sheet No. 1.	Interest and Depreciation.	Total Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
E 72 -	Tanned hides, laying of, in powder rooms - - - - - -	- -	1 3 –	– 10 –	– 19 7½	2 12 7½	– 11 4	3 3 11½
E 77 -	Manufacturing Miscellaneous Plant, viz.:							
	Cushions for boat - - - - - - - - -	3						
	Flags, powder, red - - - - - - - - -	4						
	Frame, for grindstone, complete - - - - - - -	1						
	Funnel, copper, for loading mortars - - - - - -	1						
	Gauges, metal, for iron bursters.—Length - 20-pounder -	1	13 15 –½	9 13 6¼	11 14 4½	35 2 11¼	7 10 10	42 13 9¼
	12 „ -	1						
	9 „ -	1						
	Instrument, extracting pillar fuzes - - - - - -	1						
	Pans, Steam, for extracting Saltpetre - - - - - -	3						
	Scrapers, copper, shell - - - - - - - - -	4						
	Totals - - - £.		14 18 –½	10 3 6¼	12 14 –	37 15 6¾	8 2 2	45 17 8¾

Examined,

James C. Hurst,
Accountant, and Auditor to Manufacturing Departments.

Edward Keate, Captain, R. A.,
Assistant Superintendent.

No. 8.—Royal Laboratory, Devonport—*continued.*

STATEMENT (F.)—CAPITAL ACCOUNT of the Royal Laboratory Department, Devonport, for the Year 1867–8.

Dr.

	£.	s.	d.	£.	s.	d.
To Balance:						
For Net Amount of Capital on 31st March 1867, viz.:						
Land	2,175	–	–			
Buildings	24,294	15	2			
Machinery and Plant	5,212	16	7¼			
				31,682	11	9¼
To Army Supplies:						
For Amount expended during the year 1867–8, viz.:						
Buildings	1,482	–	–			
Machinery	241	–	–			
				1,723	–	–
To Store Account:						
For Miscellaneous Plant issued from Store during the year 1867–8	-		-	154	17	11¼
To Production Account:						
For Miscellaneous Plant added in the Department in the year 1867–8	-		-	37	15	6¾
To Royal Engineer Department:						
For proportion of expense of erecting a Pier at Bull Point	-		-	70	8	3
Total £.				33,668	13	6¼

Cr.

	£.	s.	d.	£.	s.	d.
By Production, 1867–8:						
For One Year's Depreciation on Plant, &c., viz.:						
5 per Cent. on Buildings (24,294*l.* 15*s.* 2*d.*, per contra)	1,214	14	9			
10 per Cent. on Machinery (5,212*l.* 16*s.* 7*d.*, per contra)	521	5	8			
	1,736	–	5			
For value of Proof House, &c., destroyed by fire, viz.:						
Buildings £. 90 5 –						
Miscellaneous Plant 4 5 6¾						
	94	10	6¾			
				1,830	10	11¾
By Sundry Departments:						
For Machinery and Miscellaneous Plant issued during the year 1867–8	-		-	233	17	2
By Balance:						
For Net Amount of Capital on 31st March 1868, viz.:						
Land	2,175	–	–			
Buildings (including Pier)	24,542	3	8			
Machinery and Miscellaneous Plant	4,887	1	8½			
				31,604	5	4½
Total £.				33,668	13	6¼

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

Edward Keate, Captain, R. A.,
Assistant Superintendent.

— No. 9. —

WORKSHOPS, GUN WHARF, DEVONPORT.

(A.)—BALANCE SHEET, No. 1, of Her Majesty's Workshops, Gun Wharf, Devonport, for the Year 1867-8.

Dr.

	£.	s.	d.
To Wages	1,396	–	–
„ Sick Pay	16	19	9
„ Stores and Materials	1,078	10	5¾
„ Stationery	1	10	–
„ Medical Attendance	5	–	–
„ Water	3	–	–
„ Repairs to Buildings	5	–	–
„ Miscellaneous Expenditure:			
Employment of Boat's Crew (£. 2, s. –, d. –)			
Travelling Expenses (£. 2, s. 14, d. 8)	4	14	8
Total £.	2,510	14	10¾

Cr.

	£.	s.	d.
For Manufactures, as per Statement (C.)	606	19	6¼
„ Repairs „ „ (D.)	596	16	6¼
„ Conversions „ „ (E.)	737	5	1
„ Alterations „ „ (F.)	258	18	7
„ Miscellaneous Services, „ (G.)	245	18	5
„ Additions to Plant from Store during 1867-68	64	16	9¼
Total £.	2,510	14	10¾

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

W. L. Penno,
Superintendent of Stores.

(B.)—BALANCE SHEET, No. 2, of Her Majesty's Workshops, Gun Wharf, Devonport, for the Year 1867-8.

Dr.

				£.	s.	d.
To Wages				1,396	–	–
„ Sick Pay				16	19	9
„ Stores and Materials				1,078	10	5¾
„ Stationery				1	10	–
„ Medical Attendance				5	–	–
„ Water				3	–	–
„ Repairs to Buildings				5	–	–
„ Miscellaneous Expenditure:						
Employment of Boat's Crew	£. 2	s. –	d. –			
Travelling Expenses	2	14	8	4	14	8
„ One Year's Interest at 3½ per cent. on Invested Capital	1,158	9	3			
„ Ditto on One-fifth of Working Capital	502	3	–			
	1,660	12	3	58	2	5
„ One Year's Depreciation, as per Capital Account (H.)				70	14	5
Total £.				2,639	11	8¾

Cr.

	£.	s.	d.
For Manufactures, as per Statement (C.)	638	19	1¾
„ Repairs „ „ (D.)	628	5	–¾
„ Conversions „ „ (E.)	776	1	9
„ Alterations „ „ (F.)	272	11	4½
„ Miscellaneous Services, „ (G.)	258	17	7½
„ Additions to Plant from Store, during 1867-8	64	16	9¼
Total £.	2,639	11	8¾

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

W. L. Penno,
Superintendent of Stores.

No. 9.—Workshops, Gun Wharf, Devonport—*continued.*

(C.)—STATEMENT showing the Manufactures in the Workshops at Her Majesty's Gun Wharf, Devonport, between 1st April 1867 and 31st March 1868.

Number of Order.	DESCRIPTION.	Numbers.	Labour.	Material.	Indirect Expenditure.	TOTAL per Balance Sheet, No. 1.	TOTAL per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
25	Handles for levers for 7-inch muzzle-loading, rifled, guns Order, 18 April 1867 (57—Devonport—1813).	6	– 11 6	– – 8	– 2 10½	– 15 –½	– 15 10
26. 105. 121. 173. 189.	Scales, wood, tangent, for Her Majesty's ships: 9-inch muzzle-loading, rifled 8 " " " 7 " " " 64-pounder " " 2 March 1866 (57—2—14,920); 1 April 1867 (15,182); 25 April 1867 (15,356); 28 May 1867 (15,572), 26 July 1867 (15,834).	29 54 34 9	10 1 9	4 1 2¾	2 10 11	16 13 10¾	17 11 5¼
27. 107. 178	Fids, wood: 9-inch muzzle-loading, rifled 8 " " " 7 " " " 32-pounder smooth bore 20 March 1867 (57—2—15,090); 1 April 1867 (15,182); 28 May 1867 (15,572); 23 January 1867 (57—Devonport—1,633).	2 4 8 5	2 3 –	5 13 10	– 10 10	8 7 8	8 16 5¾
28. 103	Formers, wad: 9 inch muzzle-loading, rifled 8 " " " 7 " " " 1 April 1867 (57—2—15,182); 25 April 1867 (15,356); 28 May 1867 (15,572).	1 6 6	1 1 5½	2 12 2	– 5 5	3 19 –½	4 3 2½
29	Keys, iron, forelock, new pattern 20 March 1867 (57—2—15,090).	150	1 18 2½	– 2 9¾	– 9 7	2 10 7¼	2 13 3¼
38	Hooks, with lanyards for life-buoys 20 March 1867 (15,090).	48	– 6 2	– – 4¾	– 1 6½	– 8 1¼	– 8 6½
61	Pedestal, 32-pounder, for Royal Artillery at Pendennis Castle 23 January 1867 (57—Devonport—1633).	1	– – 8½	– – 10	– – 2	– 1 8½	– 1 9½
62. 94	Trucks, wood: Transporting, metal bouched for 8-inch 9-ton muzzle-loading, rifled, guns For 6-pounder 17-cwt. carriages: Fore Hind 23 April 1867 (57—2—15,347); 25 April 1867 (15,356); 22 January 1868 (57—Devonport—1867.)	24 16 10	14 4 9 – 18 9	33 9 5¾ 2 4 6½	3 11 9¼ – 4 9	51 6 – 3 8 –½	54 – – 3 11 7¾

67	Gang board for garrison boat at Barbican 2 May 1867 (57—22—9737).	1	– 1 9	– 2 10¾	– – 5¼	– 5 1	– 5 4¼
74	Rakes, iron, with handles 23 January 1867 (57—Devonport—1633).	7	2 8 3	– 2 10½	– 12 1¾	3 3 3¼	3 6 7¼
85	Boards, label 18 April 1867 (57—Devonport—1713).	500	2 5 1½	5 – 2¼	– 11 5¼	7 16 9	8 5 –¼
98	Skids, African oak, 4′ 6″ × 3½″ × 3″ Spikes, marline, large, for Town Major 27 May 1867 (57—22—9782).	4 1	– 5 4½	– 10 8¼	– 1 4	– 17 4¾	– 18 4¼
101	Beds, or chocks, wood, for Her Majesty's ships: 9-inch muzzle-loading, rifled 8 " " " 7 " " " 25 April 1867 (57—22—15,356); 28 May 1867 (15,572).	1 5 2	– 14 2	1 – 11¾	– 3 6½	1 18 8¼	2 – 8½
102	Coins, wood, large, for Her Majesty's ships: 9-inch muzzle-loading, rifled 8 " " " 7 " " " 25 April 1867 (57—2—15,356); 28 May 1867 (15,572).	1 5 2	1 14 2½	2 18 10¼	– 8 7½	5 1 8¼	5 7 –¼
109	Split pins, for rollers 30 May 1867 (57—Devonport—1732).	8	– 1 9	– – 1¼	– – 5¼	– 2 3½	– 2 5
114	Carriage, common, 64-pounder, muzzle-loading, rifled, 3 feet 9 inches, for Her Majesty's ship "Pallas." 1 June 1867 (57—2—15,675).	1	5 8 11½	8 5 10¼	1 7 5¾	15 2 3½	15 18 3½
132	Scale boards, for Bull Point, 3 feet 6 inches square 8 June 1867 (57—Bull Point—1014).	2	4 13 4	2 8 7¼	1 3 6½	8 5 5¾	8 14 1¼
133	Planks, fir, 12 feet × 18 inches × 3 inches: For trails For wheels Rollers, elm, with knobs, 14 inches × 5″, for 1st Dorset Artillery Volunteers 11 June 1867 (V—1st Dorset Artillery—109).	2 4 2	1 4 6	2 – –½	– 6 2	3 10 8½	3 14 5¼
145	Slides, wood, new pattern for boat carriages: 12-pounder 9 " 20-pounder new pattern for Her Majesty's ships "Knat," "Flirt," "Fly," "Lynx," "Pert," "Growler," "Midge," and "Hart." 6 July 1867 (57—2—15,915); 27 January 1868 (17,183); 30 December 1867 (16,975).	15 9 16	101 5 11¼ 59 2 2½	85 5 8¾ 79 11 11¼	25 10 7½ 14 18 –½	211 5 8½ 154 8 9¼	222 8 4½ 162 11 6¼
168	Socket for rear roller of carriage for Her Majesty's ship "Rattlesnake"	1	– 4 3	– – 3	– 1 –¾	– 5 6¾	– 5 10¼
179	Mauls, wood 23 January 1867 (57—Devonport—1633).	40	3 – 10½	3 1 1½	– 15 4½	6 17 4½	7 4 7½

No. 9.—Workshops, Gun Wharf, Devonport—(C.) Statement showing the Manufactures in the Workshops, &c.—*continued.*

Number of Order.	DESCRIPTION.	Numbers.	Labour.	Material.	Indirect Exqenditure.	TOTAL per Balance Sheet, No. 1.	TOTAL per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
180, 181 - -	Rollers, wood:						
	20 inches × 5 inches - - - - - - - - - - - -	6	– 6 3½	1 3 4	– 1 6¾	1 11 2¼	1 12 10¼
	14 inches × 5 inches - - - - - - - - - - - -	6					
	23 January 1867 (1,633).						
187 - - -	Levers, new pattern, for lifting joints, S. S. - - - - - - - -	150	17 9 7½	4 1 3¼	4 8 2	25 19 –¾	27 6 5¼
	21 August 1867 (57—Devonport—1763); 18 September 1867 (57—2—16,321).						
194 - - -	Spare articles for boat carriages:						
	Levers:						
	Adjusting - - - - - - - - - - - - -	24					
	Compressing - - - - - - - - - - - - -	24					
	Screws, compressing - - - - - - - - - - - -	24					
	Bolts, fighting:		23 2 6	11 – 1¼	5 16 7½	39 19 2¾	42 1 4¼
	Long - - - - - - - - - - - - - -	12					
	Short - - - - - - - - - - - - - -	12					
	Keys, iron, for cap squares - - - - - - - - - - -	24					
	29 August 1867 (57—2—16,359).						
202 - - -	Handles for hand axes - - - - - - - - - - - - -	12	– 7 4	– 2 9	– 1 10	– 11 11	– 12 6½
	7 September 1867 (54—1/20th Regiment—200).						
209 - - -	Buoy, wood, mooring, for Town Major - - - - - - - - -	1	– 3 10½	– 6 11¼	– – 11½	– 11 9¼	– 12 4¾
	15 November 1867 (57—22—10,200).						
212 - - -	Plugs, wood, for holding barrels when browning - - - - - - -	24	– 2 1½	– 1 1½	– – 6¼	– 3 9¼	– 3 11½
	18 November 1867 (57—Devonport—1826).						
218 - - -	Barrows for transporting elongated projectiles on board Her Majesty's ships:						
	"Achilles" - - - - - - - - - - - - -	7	14 3 7	11 13 5½	3 11 6	29 8 6½	30 19 7
	"Defence" - - - - - - - - - - - - -	5					
	26 July 1867 (57—2—15,834).						
154 - - -	Handles, hammer, for Military Prison - - - - - - - - -	150	– 19 –	– 19 1	– 4 9½	2 2 10½	2 5 1½
	17 July 1867 (59—Devonport—122); 15 January 1868—127).						
	Totals - - - £.		270 11 3¾	268 4 1¾	68 4 –¾	606 19 6¼	638 19 1¾

Examined,

James C. Hurst,
Accountant, and Auditor to the Manufacturing Departments.

W. L. Penno,
Superintendent of Stores.

No. 9.—Workshops, Gun Wharf, Devonport—*continued.*

(D.)—STATEMENT showing the Repairs, &c., in Her Majesty's Workshops, Gun Wharf, Devonport, between 1st April 1867 and 31st March 1868.

Number of Order.	DESCRIPTION.	Numbers.	Labour.	Material.	Indirect Expenditure.	TOTAL per Balance Sheet, No. 1.	TOTAL per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
11. 49. 99. 141 -	Slides for Her Majesty's Ships:						
	64-pounder for Her Majesty's ship "Racoon;" slide examined in the Sound; brought on shore; broken head, block removed and replaced by a new one; four screws repaired.	1					
	7-inch muzzle-loading, rifled, for "Vixen" - - - - - - - -	3					
	For "Clinker":						
	7-inch - - - - - - - - - - - - - - - -	1	19 8 5¼	20 – 8	4 18 1	44 7 2¼	46 13 11¼
	40-pounder - - - - - - - - - - - - - -	1					
	7-inch muzzle-loading, rifled, for "Defence" - - - - - - -	1					
	Repair and alter 64-pounder muzzle-loading, rifled, for "Gnat," "Flirt," "Fly," "Lynx," and "Pert."	5					
	7-inch muzzle-loading, rifled, for "Prince Consort" - - - - - -	8					
	64-pounder muzzle-loading, rifled, for "Rattlesnake" - - - - - -	1					
	30 December 1867 (57—2—16,975); 27 January 1868 (17,183).						
12. 24. 87. 112. 164. 190, 191.	Carriages for Her Majesty's Ships, &c., including preparing and fitting breast-pieces, and metal bouching the breeching holes:						
	64-pounder, for Her Majesty's ship "Racoon," broken loop removed from rear of bracket, and a new one forged and fixed.	1					
	6-pounder, elevating top and under - - - - - - - - -	4					
	8-inch smooth bore, for "Rattlesnake" - - - - - - - -	8					
	64-pounder, received from "Liverpool" - - - - - - - -	12					
	9-inch muzzle-loading, rifled, for "Prince Albert" - - - - - -	5					
	8-inch smooth bore, for "Liverpool" - - - - - - - - -	20					
	Common 40-pounder breech-loading, rifled, for "Buzzard" - - - -	2					
	Sliding 40-pounder breech-loading, rifled, for—		88 5 4¾	34 19 6	22 5 1	145 9 11¾	153 3 3
	"Newport" - - - - - - - - - - - - - -	1					
	"Lapwing" - - - - - - - - - - - - - -	2					
	Common 64-pounder muzzle-loading, rifled, from "Aurora" - - -	3					
	Common 6-pounder, 17 cwt., from "Ferret" - - - - - - -	8					
	12-pounder, top and under, for "Prince Consort" - - - - - -	1					
	Common 40-pounder, for "Penelope" - - - - - - - -	1					
	Sliding 7-inch breech-loading, rifled - - - - - - - - -	4					

No. 9.—Workshops, Gun Wharf, Devonport—(D.) Statement showing the Repairs, &c.—*continued.*

Number of Order.	DESCRIPTION.	Numbers.	Labour.	Material.	Indirect Expenditure.	TOTAL per Balance Sheet, No. 1.	TOTAL per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
21. 201 - -	Repair sights, and re-mark figures and letters:						
	8-inch, 65 cwt.:						
	Fore - - - - - - - - - - - - - -	15					
	Hind - - - - - - - - - - - - - -	15					
	64-pounder muzzle-loading, rifled:						
	Centre—Fore - - - - - - - - - - - -	12	1 10 11	– – 8½	– 7 9¾	1 19 5	2 1 5¾
	Hind - - - - - - - - - - - - - -	12					
	Tangent - - - - - - - - - - - - -	2					
	Trunnion - - - - - - - - - - - - -	24					
48 - - -	Repair fireplaces of cranes on the wharf, including making and fixing 24 new bars:						
	10 tons - - - - - - - - - - - - - -	1					
	5 tons - - - - - - - - - - - - - -	1	2 11 8½	2 16 9	– 13 –½	6 1 6	6 7 11
53. 150 - -	Repair buoys, night, life - - - - - - - - - - - -	20	10 16 6½	2 1 10¾	2 14 7	15 13 –¼	16 9 6½
151 - - -	Apparatus for ditto, ditto:						
	Bolts, trigger - - - - - - - - - - - - -	6					
	Covers, portfire - - - - - - - - - - - -	7					
	Escutcheons, metal - - - - - - - - - - - -	9					
	Guards, iron - - - - - - - - - - - - -	36					
	Guides, iron, or forked, stay - - - - - - - - - - -	8	3 2 9½	- -	– 15 10	3 18 7½	4 2 8¾
	Knobs, metal - - - - - - - - - - - - -	12					
	Pulleys - - - - - - - - - - - - - -	9					
	Screws, iron - - - - - - - - - - - - -	4					
60. 86. 131. 183	Repair for Military Train, "Local Charge," including making of cushions—large, 3; small, 2; and aprons, 3:						
	Wagons, bread - - - - - - - - - - - - -	9					
	Carts, bread and meat - - - - - - - - - - - -	2	12 8 2½	5 19 4¾	3 2 7	21 10 2½	22 12 10
64 - - -	Repair and lengthen to 6 feet 3 inches, axletrees, iron, transporting - - -	8	3 – 9	– 14 7½	– 15 3½	4 10 8	4 15 4½
71 - - -	Repair for Her Majesty's ship "Prince Albert," rammers, 9-inch muzzle-loading, rifled.	8	– 5 8	– 1 6	– 1 5	– 8 7	– 9 –½
79. 172 - -	Repair, alter, and adjust chocks, dismounting, for Her Majesty's ships:						
	"Daphne," - pairs - - - - - - - - - - - -	1					
	"Cambridge" " - - - - - - - - - - - -	2					
	"Rattlesnake" " - - - - - - - - - - - -	1					
	"Canopus" - " - - - - - - - - - - - -	2					
	"Redwing" - " - - - - - - - - - - - -	1					
	"Flirt" - - " - - - - - - - - - - - -	1	7 18 –½	1 18 –¼	1 19 10	11 15 10¾	12 8 3¾
	"Gnat" - - " - - - - - - - - - - - -	1					
	"Fly" - - " - - - - - - - - - - - -	1					
	"Lapwing" - " - - - - - - - - - - - -	1					
	"Newport" - " - - - - - - - - - - - -	1					

93	Repair general service wagons belonging to Military Train equipment 24 May 1864 (54—Military Train—3983).	2	7 17 6½	4 17 7¾	1 19 9	14 14 11¼	15 10 5¾
95	Repair Screws:						
	Elevating:						
	7-inch or 64-pounder, muzzle-loading, rifled	51					
	7-inch L. S., or 68-pounder, smooth bore	1					
	40-pounder, breech-loading, rifled	38	6 18 ½	– 7 4	1 14 9½	9 – 2	9 9 8
	20 to 6-pounder, breech-loading, rifled	37					
	Common	9					
	Connecting	42					
174	Repair compressor of Colonel Shaw's carriage on board Her Majesty's ship "Prince Albert."	1	– 5 3	– –	– 1 3	– 6 6	– 6 10
206	Repair Field Marine Carriages, Limbers, &c.:						
	Carriages, 12-pounder breech-loading, rifled	16					
	Limbers " " "	13					
	Boxes:						
	Limber ammunition	26	46 17 10½	11 17 7¾	11 16 5	70 11 11¼	74 6 3
	Centre fuze	13					
	Axletree match	16					
	Wheels	67					
220	Repair Purveyor's Stores:						
	Slides for bedsteads	33					
	Heads for - ditto	1					
	Chopper, meat	1					
	Fender, soldiers'	1					
	Shovel, officers'	4					
	Poker - ditto	1	3 2 10	– 4 6¾	– 15 10	4 3 2¾	4 7 7
	Scissors, hair-cutting, pairs	7					
	Scuttles, coal, copper	1					
	Razors, F.P.	8					
	Dogs, patent, (plumbers' tools)	3					
	Pail, slop, with cover	1					
223	Repair for 2nd Battalion, Rifle Brigade: 28 February 1868 (54—2nd Battalion, Rifle Brigade—171).						
	Axes:						
	Broad, with handles	1					
	Felling, hand	2					
	Hand	1					
	Bill-hooks	3	– 2 7½	– – 1¾	– – 7	– 3 4¼	– 3 6½
	Cases, black leather, for felling axes	2					
	Chisels, cold	1					
	Spades	1					

No. 9.—Workshops, Gun Wharf, Devonport—(D.) Statement showing the Repairs, &c.—*continued.*

Number of Order.	DESCRIPTION.	Numbers.	Labour.	Material.	Indirect Expenditure.	TOTAL per Balance Sheet, No. 1.	TOTAL per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
91 - - -	Repairs, &c., for Military Store Department, Bull Point:						
	Repair:						
	Axes, pick	7					
	Barrows, powder	2					
	Cart, ammunition	1					
	Hammers, shell, base	1	4 19 9	1 7 11½	1 5 2	7 12 10½	8 – 10¾
	Fit for farmer's draft, for one or two horses, cart, ammunition	1					
	Cut ¾-inch chain into 11 lengths of 10 feet long each, and place a ring, 6 inches in diameter, to one end of each length.	11					
196 - - -	Repair Articles in use of Military Store Department:						
	Barrows, wheel	3					
	Carts, hand	4					
	Carriages, devil	1					
	Chisels	14					
	Drugs:						
	4-wheel	2					
	2 "	1	9 11 7	2 19 1¼	2 8 4	14 19 –¼	15 14 9½
	Hammers	10					
	Instruments for taking impressions of vents	1					
	Punches	11					
	Springs for holding brushes for lacquering bores of ordnance	2					
	Wedges	12					
19. 42. 57. 82. 146.	Repair Miscellaneous Stores, viz.:						
	Axes:						
	Boarding, new pattern	7					
	Pick, common	105					
	Felling	7					
	Barrels, budge	8					
	Barrows, wheel, intrenching	10					
	Bearers, shot and shell	41					
	Bills, hand	42					
	Bottoms, waterproof, sets	1					
	Bouches, breech, copper:						
	40-pounder breech-loading, rifled	120					
	20 " " "	51					
	12 " " "	36					
	6 " " "	2					

Boxes:	
Fuze, tin	16
Grease, half round	3
Tin, Bickford's fuze	1
Carts, water	2
Chests, arm	30
Chisels:	
Hot and cold	13
Tampeon	207
Coins, wood:	
7-inch muzzle-loading, rifled	26
7-inch breech-loading, rifled	66
40-pounder breech-loading, rifled:	
Common	35
Sliding	7
12-pounder, boat:	
Small	55
Large	3
6-pounder, large	1
Hand, common	104
100-pounder, smooth bore	49
68 " "	25
8-inch "	29
Compasses, spring, pairs	8
Coppers, camp, field service:	
12 gallons	26
15 "	1
20 "	3
Crates, for camp kettles	9
Crows, iron, 5½ feet	1
Crutches:	
Rifled	3
Smooth bore	29
Cups, tin, Armstrong, 7-inch	928
Funnels:	
Cartridge:	
Gun	26
Small arm	4
Shell	9
Water cart	2
Gauges, iron, shot and shell, smooth bore:	
10-inch	2
8-inch or 68-pounder	7
32-pounder	9
24 "	2
12 "	6
6 "	7

No. 9.—Workshops, Gun Wharf, Devonport—(D.) Statement showing the Repairs, &c.—*continued.*

Number of Order.	DESCRIPTION.	Numbers.	Labour.	Material.	Indirect Expenditure.	TOTAL per Balance Sheet, No. 1.	TOTAL per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
	Repair Miscellaneous Stores—*continued.*						
	Gauges, iron shot and shell, rifled:						
	7-inch, breech-loader	3					
	40-pounder, ditto	2					
	20-pounder, ditto	3					
	12 or 9-pounder, ditto	1					
	6-pounder, ditto	1					
	Handspikes, common:						
	7 feet	38					
	6 feet	224					
	5 feet	81					
	Hammers:						
	Claw:						
	Large	6					
	Small	3					
	Sledge	1					
	Hatchets, hand	38					
	Hooks, can, copper	42					
	Instruments, extracting projectiles:						
	7-inch, pattern II.	7					
	8-inch, pattern I.	2					
	Irons, priming	82					
	Kettles, camp, Flanders	50					
	Keys, forelock:						
	Copper	221					
	Iron	38					
	Knives:						
	Laboratory	16					
	Magazine	13					
	Lecture-room articles:						
	Boards, black	1	73 8 3½	14 – –¼	18 10 1	105 18 4¾	111 9 10¾
	Compasses, chalk	1					
	Easels	1					
	Knives, large	1					
	Poles, flag	7					
	Rules, common	1					
	Straight edges	1					

Locks, pad, metal, middling	1
Machines, Caffin's	3
Mallets, tent	60
Measures, copper:	
Blank, 3½ drams	4
Caffin's:	
6 lbs.	10
5 lbs.	10
4 lbs.	10
3 lbs.	2
Common:	
4 lbs.	4
2 lbs.	3
1 lb.	4
8 oz.	4
4 oz.	4
2 oz.	4
1 oz.	4
Pendulums, brass	12
Pickets, post or park	1
Pins, keep, Armstrong	123
Plugs, metal:	
Housing	47
Stop, handspike, socket	294
Poles:	
Flag	3
Tent:	
Circular	55
Hospital marquee	4
Laboratory	1
Officer's	1
Rammers, gun:	
7-inch muzzle-loading, rifled	29
8-inch - ditto - ditto	5
Ring:	
Copper, for trunnions	4
Tripod	13
Vent piece:	
40-pounder breech-loading, rifled	116
20-pounder - ditto - ditto	16
Saws, slitting	3
Scissors, laboratory, pairs	6
Screens, copper, rocket	27
Screws, fixing, sights	326

No. 9.—Workshops, Gun Wharf, Devonport—(D.) Statement showing the Repairs, &c.—*continued.*

Number of Order.	DESCRIPTION.	Numbers.	Labour.	Material.	Indirect Expenditure.	TOTAL per Balance Sheet, No. 1.	TOTAL per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
	Repair Miscellaneous Stores—*continued.*						
	Shovels:						
	Copper	15					
	Iron helved	19					
	Spades	44					
	Spikes, gun:						
	Common	10					
	Spring	4					
	Sponges, gun:						
	Stave, 12 or 9-pounder, breech-loading, rifled	16					
	Rope, 9-inch muzzle-loading, rifled	1					
	Tampeons, wood:						
	8-inch muzzle-loading, rifled	1					
	7-inch - ditto - ditto	20					
	Tools, Pioneers':						
	Axes:						
	Broad	2					
	Felling	2					
	Pick	5					
	Bars, crow	1					
	Shovels	1					
	Spades	1					
	Tripods	14					
	Trivets, for coppers, camp:						
	12-gallons	4					
	20-gallons	11					
	Trucks, wood:						
	68-pounder, smooth bore	74					
	32-pounder, smooth bore:						
	Fore	27					
	Hind	42					
	12-pounder	55					
	6-pounder	23					
	Transporting	160					
	Tubs, washing	33					
	Wadhooks, 8-inch muzzle-loading, rifled	5					
	Wedges, iron	4					

0.14. 18. 22. 43. 70. 88, 89. 116. 118. 135. 147. 176, 177, 178.	Repair, clean, gauge, and paint shot and shell:																						
	Rifled shell:																						
	64-pounder muzzle-loading													737									
	7-inch breech-loading													1,883									
	Rifled shot:																						
	Case:																						
	7-inch muzzle-loading													18									
	64-pounder, ditto													12									
	Hollow, 7-inch breech-loading													765									
	Solid:																						
	7-inch, chilled													214									
	64-pounder muzzle-loading													200									
	40-pounder breech-loading													789									
	20-pounder - ditto													441									
	12-pounder - ditto													1,226									
	9-pounder - ditto													402									
	6-pounder - ditto													395									
	Smooth bore shell:																						
	Naval, 8-inch													13,743									
	Naval, 10-inch													308	78	9	6¾	15	5	9¾	19 15 8	113 11 –½	119 10 8½
	Smooth bore shot:																						
	Case:																						
	12-pounder howitzer													22									
	8-inch gun													51									
	32-pounder gun													17									
	Hollow:																						
	10-inch													504									
	8-inch													1,476									
	12-pounder howitzer													85									
	Solid:																						
	100-pounder, or 9-inch:																						
	Iron													1,283									
	Steel													118									
	68-pounder:																						
	Iron													947									
	Steel													137									
	32-pounder													8,658									
	12-pounder													1									
	6-pounder													13,812									
													TOTAL	£.	381	1	9¾	119	13	3¼	96 1 5¼	596 16 6¼	628 5 –¾

(Examined) *James C. Hurst,*
Accountant, and Auditor to Manufacturing Departments.

W. L. Penno,
Superintendent of Stores.

No. 9.—WORKSHOPS, GUN WHARF, DEVONPORT—*continued.*

(E.)—STATEMENT showing the CONVERSIONS carried out in the WORKSHOPS at H. M. GUN WHARF, DEVONPORT, between 1st April 1867 and 31st March 1868.

Number of Order.	DESCRIPTION.	Numbers.	Labour.	Material.	Indirect Expenditure.	TOTAL per Balance Sheet, No. 1.	TOTAL per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
16, 17. 41. 113. 129. 149.	Carriages for H. M. ships;						
	Sliding 32-pounder to 64-pounder, M. L. R., for—						
	"Canopus"	3					
	"Rattlesnake"	1					
	"Gnat"	1					
	"Flirt"	1					
	"Fly"	1	48 7 4½	138 17 10¾	12 3 10½	199 9 1¾	209 19 2½
	"Lynx"	1					
	"Pert"	1					
	30 December 1867 (57—2—16,975); 27 January 1868 (17,183); 14 September 1867 (16,320); 20 September 1867 (16,378); 1 June 1867 (15,675); 27 January 1868 (17,183).						
	Common 32-pounder to 64-pounder, M. L. R., for—						
	"Rattlesnake"	8					
	"Cambridge"	9	92 – 11½	97 5 2¾	23 4 1	212 10 3¼	223 14 2
	"Liverpool"	6					
	12-pounder howitzer boat to 12-pounder Armstrong, including casting, finishing, and fixing metal bouches for breeching, and painting:						
	Top	2	2 5 11	1 – 6	– 11 7	3 18 –	4 2 1
	Under	2					
	32-pounder, 56 cwt., to 64-pounder, with horns and sockets, for breeching holes, 2 feet 8 inches, for "Pallas."	1	4 8 4½	4 8 11¼	1 2 3½	9 19 7¼	10 10 1
	Boat to present pattern:						
	12-pounder Top	14					
	12-pounder Under	14					
	9-pounder Top	9	161 6 2	54 5 8¾	40 13 4	256 5 2¾	269 15 2
	9-pounder Under	9					
	20-pounder Armstrong for "Flirt," "Fly," "Gnat," "Growler," "Hart," "Midge," "Lynx," and "Pert"	16					
30	To present pattern:						
	Bits, vent	206	2 – 4	– 6 7¼	– 10 2	2 17 1¼	3 – 1½
	Irons, priming	274					
	20 March 1867 (57—2—15,090).						
31	Machines, signal rocket, to present pattern, including casting and fitting the metal stops and raised blocks, and forging and fixing the friction pins and levers, also making the screws.	20	4 16 5	– 8 3¾	1 4 3½	6 9 –¼	6 15 10
37. 58. 153	Tampeons, wood to present pattern:						
	6-pounder	32					
	100 "	20	1 – –	– 2 1½	– 5 –½	1 7 2	1 8 7¾
	12 "	16					

39. 122	Rammers, wood, gun:						
	32-pounder S. B. to 64-pounder M. L. R.	6					
	32-pounder to 64-pounder, for H. M. S. "Pallas," and for store	30					
	10 inch	20					
	8 "	111	6 3 –½	– 3 11	1 11 –½	7 18 –	8 6 3½
	Head, rammer { 32-pounder	100					
	Head, rammer { 8-inch	10					
	32-pounder	10					
	13 June 1867 (57—2—15,695); 7 December 1867 (57—Devonport—1,831).						
50	Slides for H. M. S. "Daphne" (commenced and cancelled)	2	1 – 10½	– 3 –¾	– 5 3	1 9 2¼	1 10 9
55	Repairable slides to "Serviceable" for 64-pounder M. L. R. guns for H. M. S. "Canopus"	3	4 4 –½	– 12 8¼	1 1 3	5 17 11¾	6 4 2½
68	Tampeon 68-pounder, to tampeon with wad, including making the wad	1	– 1 4	– – 8½	– – 4	– 2 4½	– 2 6
76	Handspikes, roller, sea-service, 7 feet, to land service, with palls and falls	6	1 1 –	– 3 9½	– 5 3½	1 10 1	1 11 8¼
	23 January 1867 (57—Devonport—1,633).						
100. 134	Coins, wood, repairable, to:						
	6-pounder brass { Large	59					
	6-pounder brass { Small	40	4 8 5	– 2 7¾	1 2 3¼	5 13 4	5 19 3½
	For 9-pounder iron guns, for H. M. S. "Implacable," large	30	3 11 10½	– 3 5¼	– 18 1½	4 13 5¼	4 18 4
106	Wadhooks, 7-inch M. L. R. to present pattern	16	– 11 6	– –	– 2 10½	– 14 4½	– 15 1¾
	25 April 1867 (57—2—15,356).						
142	Heads, rammer, 6-pounder and worn staves to rammers gun 6-pounder, for 7 feet 6-inch gun.	30					
	Heads, sponge, and worn staves, to sponges with staves, for 7 feet 6-inch gun	15	– 14 –	– –	– 3 6	– 17 6	– 18 5¼
175	Scales, tangent, unserviceable, smooth-bore;						
	To 64-pounder 64-cwt., M. L. R.	24					
	To 20-pounder Armstrong for H. M. S. "Newport"	4	– 14 –	– –	– 3 6	– 17 6	– 18 5¼
	26 July 1867 (57—2—15,834).						
192	Fids, breech, 7-inch M. L. R. to 64-pounder, for H. M. S. "Canopus"	3	– 1 5	– – 2¼	– – 4¼	– 1 11½	– 2 –¾
205	Scale, tangent, brass for 18-pounder, 38 cwt. gun	1	– 1 10	– – 9	– – 5½	– 3 –½	– 3 2½
	13 September 1867 (V. I.—Devon Artᵧ.—6—81).	*Lbs.*					
211	Lead, and tin into solder, for store	55 10/16					
	Lead run into pigs	*No.* 4	– 4 4½	– –	– 1 1	– 5 5½	– 5 9
	22 November 1867 (57—Devonport—1,827).						
215	Trippers for iron slides to present pattern:						
	8-inch M. L. R.	10					
	7-inch ditto	8	1 17 8½	– 3 4½	– 9 7	2 10 8	2 13 4
219	Sponges for 6-pounder brass guns, to sponges for 6 pounder iron guns of 17 cwt.	16	– 6 –	– –	– 1 6	– 7 6	– 7 11
221	Compressors, side plate, 7-inch, to 64-pounder, pairs	8	2 18 9	– 1 4	– 14 9¾	3 14 10¾	3 18 10
198	Beds, wood (spare), for new pattern, boat carriages:						
	12-pounder	12	4 17 3	1 10 5¾	1 4 6¼	7 12 3	8 – 3
	9-pounder	12					
	TOTALS £.		349 2 11½	300 1 8½	88 – 5	737 5 1	776 1 9

Examined, *James C. Hurst*,
Accountant, and Auditor to the Manufacturing Departments.

W. L. Penno,
Superintendent of Stores.

No. 9.—Workshops, Gun Wharf, Devonport.

(F.)—STATEMENT showing the Stores Altered in the Workshops at Her Majesty's Gun Wharf, Devonport, between 1st April 1867 and 31st March 1868.

Number of Order.	DESCRIPTION.	Numbers.	Labour.	Material.	Indirect Expenditure.	TOTAL per Balance Sheet, No. 1.	TOTAL per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
13, 14. 130. 217. 163.	Carriages:						
	64-pounder M. L. R., on board H. M. S. "Racoon," to latest pattern, by fitting metal sockets in breeching holes, including casting, finishing, and drilling sockets.	8	2 6 10½	5 - 2¾	- 11 10	7 18 11¼	8 7 3½
	Ditto ditto ditto for store	10	2 12 3½	6 8 7¼	- 13 1¾	9 14 -½	10 4 3½
	The pattern 64-pounder to present pattern, by inserting metal bouches in breeching sockets, and painting.	1	- 9 1	- 14 3¼	- 2 3¼	1 5 7½	1 7 -
	64-pounder from Tregantle Fort, from M. L. R. to B. L. R.	4	2 19 2½	- 5 -¼	- 14 10½	3 19 1¼	4 3 3
	Sliding 64-pounder M. L. R. for H. M. S. "Redwing"	1	3 1 11½	16 10 11¾	- 15 7½	20 8 6¾	21 10 1½
40. 72	Wadhooks to present pattern:						
	11 feet for 7-inch M. L. R. guns	100	4 4 10	- 1 3¾	1 1 4½	5 7 6¼	5 13 2
	And repair 9-inch M. L. R. for H. M. S. "Prince Albert"	8					
158. 210	Levers to present pattern:						
	Wood, iron-pointed { Large	349	6 8 9	- - -	1 12 5¼	8 1 2¼	8 9 8
	Wood, iron-pointed { Small	12					
	Sea-service, according to pattern III.	246					
193	Handspikes, wood, roller, 6 feet, to present pattern	20	- 7 -¼	- - -	- 1 9	- 8 9¼	- 9 3
208	Pouches for Snider ammunition, to present pattern:						
	For 1-20th Regiment	527	4 13 11½	- 3 5¾	1 3 8¼	6 1 1½	6 7 6
	For 2nd Battalion, Rifle Brigade	76					
110. 125. 152. 162. 200.	Slides, 18 June 1867 (57—2—15678):						
	7-inch B. L. R. for H. M. S. "Cambridge"	3	38 - 1¼	148 2 -	9 11 7¼	195 13 8¼	205 19 10
	Skeleton in use at Dockyard to show position of bollard: { 8 & 9 inch	1					
	Skeleton in use at Dockyard to show position of bollard: { 7 inch	1					
	Iron for H. M. ships, drill holes for lubricating rollers, cut away flanges for removal of sockets, and fix iron stops for sockets { 9-inch M. L. R.	3					
	Iron for H. M. ships, drill holes for lubricating rollers, cut away flanges for removal of sockets, and fix iron stops for sockets { 8-inch "	27					
	Iron for H. M. ships, drill holes for lubricating rollers, cut away flanges for removal of sockets, and fix iron stops for sockets { 7-inch "	5					
	Iron for H. M. ships, drill holes for lubricating rollers, cut away flanges for removal of sockets, and fix iron stops for sockets { Rollers, spare	4					
	Wood, 64-pounder, for H. M. S. "Redwing"	1					
	Boat, 12-pounder, received from Woolwich, by adding an additional chock	1					
	40-pounder for H. M. S. "Newport"	1					
	10 feet, for H. M. S. "Lapwing"	1					
	11 feet " "	1					
	Iron for H. M. S. "Prince Consort," cut away flanges, fix iron stops for socket, and metal stops for stop handspike.	4					
	Totals £.		65 4 1	177 5 10¾	16 8 7¼	258 18 7	272 11 4½

Examined, *James C. Hurst*,
Accountant, and Auditor to the Manufacturing Departments.

W. L. Penno,
Superintendent of Stores.

(G.)—STATEMENT showing the MISCELLANEOUS SERVICES performed in the WORKSHOPS at HER MAJESTY'S GUN WHARF, DEVONPORT, between 1st April 1867 and 31st March 1868.

Number of Order.	DESCRIPTION.	Numbers.	Labour.	Material.	Indirect Expenditure.	TOTAL per Balance Sheet, No. 1.	TOTAL per Balance Sheet, No. 2.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
23 - - -	Adjust axletrees, iron, transporting for metal bouched trucks - - - -	4	– 5 11	- -	– 1 5¾	– 7 4¾	– 7 9½
34. 56. 66. 80. 124. 137. 140. 148. 184.	Adjust and paint carriages:						
	68-pounder 95 cwt. for Bovisand - - - - - - - - -	2					
	24-pounder howitzer rear chock, for issue to Portsmouth - - - -	8					
	Boat { 9-pounder - - - - - - - - - - - -	4					
	Boat { 6-pounder - - - - - - - - - - - -	6					
	Rear chock for H. M. S. "Jumna" { 20-pounder Armstrong - - - -	5					
	Rear chock for H. M. S. "Jumna" { 24-pounder howitzer - - - -	1					
	And lay guns on board H. M. S. "Cambridge" { 32-pounder - - -	31					
	And lay guns on board H. M. S. "Cambridge" { 8-inch - - - -	4					
	Boat, 12-pounder howitzer, light { Top - - - - - - - -	2					
	Boat, 12-pounder howitzer, light { Under - - - - - - - -	2					
	For H. M. S. "Clinker" { 7-inch - - - - - - - - -	1					
	For H. M. S. "Clinker" { 40-pounder - - - - - - - -	1					
	6-pounder elevating top and under - - - - - - - - -	4	30 16 –½	7 4 11¼	7 15 4	45 16 3¾	48 4 7
	And make and fix metal bouches in breeching holes. Boat, 20-pounder B. L. R., top and under, for H. M. S. "Harpy."	1					
	12-pounder howitzer, rear chock for H. M. S. "Buzzard" - - - -	2					
	32-pounder 25 cwt. for ditto - - - - - - - - - -	2					
	32-pounder 50 cwt. for coast-guard, Brixham - - - - - - -	2					
	Rear chock 20-pounder B. L. R. for H. M. S. "Newport" - - - -	1					
	6-pounder field marine, and fix strengthening plate for H. M. S. "Cambridge"	1					
	Boat 12-pounder, old pattern top, and under, including casting and fixing metal bouches for H. M. S. "Defence"	1					
	Boat, 9-pounder, top and under, for H. M. S. "Prince Consort" - - -	1					
	4 April 1867 (Devonport—5—2,460); 22 April 1867 (57—2—15,381); 22 October 1867 (57—19—5,868).						
	Adjust chocks housing:						
	For 8-inch 9-ton carriages { "Caledonia," in the Sound - - - -	4					
	For 8-inch 9-ton carriages { "Achilles" in Hamoaze - - - - -	4					
	On board H. M. S. "Dryad" - - - - - - - - - -	2	– 13 8½	– 4 2¾	– 3 6	1 1 5¼	1 2 7
32 - - -	Fit Captain Scott's running-in-and-out gear to slides received from Portsmouth for H. M. S. "Achilles."	4	2 2 1½	– 1 2	– 10 7½	2 13 11	2 16 9

No. 9.—Workshops, Gun Wharf, Devonport—(G.) Statement showing the Miscellaneous Services performed in the Workshops, &c.—*continued.*

Number of Order.	DESCRIPTION.	Numbers.	Labour.	Material.	Indirect Expenditure.	TOTAL per Balance Sheet, No. 1.	TOTAL per Balance Sheet, No. 2.
	Miscellaneous Services—*continued.*						
33. 45, 46. 77. 83. 138.161. 166.	Fix sights to guns, on board Her Majesty's ships—		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
	"Dryad" 7-inch	2					
	"Dryad" 64-pounder	2					
	"Achilles" in Hamoaze, 8-inch 9 ton guns	4					
	"Caledonia" in the Sound, 8-inch 9 ton guns	4					
	"Daphne" 7-inch	2					
	"Daphne" 64-pounder	2					
	"Liffey" 7-inch, M. L. R.	4					
	"Liffey" 64-pounder "	6					
	"Liffey" 8-inch, S. B.	18					
	"Pallas" 8-inch	4					
	"Pallas" 64-pounder	2					
	"Lord Warden" 8-inch 9 tons	14					
	"Lord Warden" 7 " 6½ "	2					
	"Lord Warden" 9 " 12 "	2	3 1 10	- - -	- 15 7	3 17 5	4 1 6
	"Rattlesnake" 64-pounder, M. L. R.	9					
	"Rattlesnake" 8-inch, S. B.	8					
	"Defence" 8-inch M. L. R.	2					
	"Defence" 7 " "	14					
	"Bellerophon" 7 " "	2					
	"Liverpool" 7 " "	4					
	"Liverpool" 64-pounder, M. L. R.	6					
	"Liverpool" 8-inch, S. B.	20					
	"Lapwing" 7-inch	1					
	"Lapwing" 40-pounder	2					
	"Gnat" 7-inch, M. L. R.	1					
	"Gnat" 64-pounder, M. L. R.	1					
	"Gnat" 20-pounder, B. L. R.	2					
44. 47	Fix elevating gear to carriages, 8-inch 9 tons, M. L. R., on board Her Majesty's ships—						
	"Achilles" in Hamoaze	4					
	"Caledonia" in the Sound	4	1 14 -	- - -	- 8 7	2 2 7	2 4 10
54	Fix rear block to slide, 7-inch B. L. R., for Her Majesty's ship "Canopus"	1	1 4 5	29 3 3	- 6 2	30 13 10	32 6 2

65. 78. 127	Fix gear to slides and elevating gear to guns and carriages, on board Her Majesty's ships—						
	"Liffey," 7-inch M. L. R.	4					
	"Lord Warden" 9-inch, 12 tons	2					
	"Lord Warden" 8-inch, 9 tons	14					
	"Lord Warden" 7-inch, 6½ tons	2					
	"Pallas," 8-inch, 9 tons	4					
	"Defence" 8-inch, 9 tons	2					
	"Defence" 7-inch, 6½ tons	14	10 19 7¾	– 5 4¼	2 15 4½	14 – 4½	14 15 1½
	"Redwing," 7-inch, 6½ tons	1					
	"Bellerophon," 7-inch, 6½ tons	2					
	"Liverpool," 7-inch, 6½ tons	4					
	"Prince Consort," 7-inch, 6½ tons	4					
	"Lapwing," 7-inch, 6½ tons	1					
	"Gnat," 7 inch, 6½ tons	1					
75	Fix altered adapters and papier-mache wads, in fuze holes of shells:						
	For "Phœbe," 64-pounder M. L. R.	180					
	For "Liffey" " "	180					
	For "Dryad" " "	60					
	Wads 7-inch	15	– 12 5½	13 3 11¼	– 3 1½	13 19 6¼	14 14 2½
	Wads 64-pounder	140					
	Adapters 7-inch	15					
	Adapters 64-pounder	27					
92	Fit two shackles to 7·8-inch chain, for issue to Town Major 8 May 1867 (57-22-9747).	2	– 3 1	– – 11¼	– – 9½	– 4 9¾	– 5 1
216	Fit new pattern buffers to slides on board Her Majesty's ship "Cambridge:"						
	7-inch M. L. R.	2	1 8 11	20 – 6	– 7 3½	21 16 8½	22 19 9
	9-inch "	1					
222	Fit studs for clamps to tangent scales, M. L. R. guns:						
	9-inch M. L. R.	–					
	8-inch "	14	– 4 4½	– – 8¼	– 1 1¼	– 6 2	– 6 6
	7-inch "	34					
225	Fit gear received from Woolwich to Colonel Shaw's carriage on board Her Majesty's ship "Prince Albert."	1	1 7 8	– – –	– 7 –	1 14 8	1 16 6
15. 157	Paint:						
	Carriages, Wood:						
	64-pounders, according to order; black outside and white inside; two coats	10	2 10 7½	– 4 9¾	– 12 9	3 8 2¼	3 11 9½
	Field, marine, and limber howitzer, 12-pounder, for Her Majesty's ship "Rattlesnake."	1					
35. 195	Forge and fit eyebolts, with nuts for Her Majesty's ships:						
	"Achilles," 8-inch, 9 tons, carriages	4	1 15 9½	– 6 3½	– 9 –	2 11 1	2 13 9
	"Pallas," 8 inch, 9 tons, carriages	1					
36	Raise wood carriages, 7-inch, 6½ tons, for Her Majesty's ship "Vixen," to 3 feet 9 inches centre of metal, including making two new brackets and one transom; making two bolts and lengthening 16, lengthening and cutting teeth in elevating arcs; enlarging holes in drums; making four new sockets for rollers and two blocks or chocks; making two moveable loops, and drilling two holes through iron rear block, and painting.	2	16 8 6	4 14 –¼	4 2 10	25 5 4¼	26 11 11

No. 9.—Workshops, Gun Wharf, Devonport—(G). Statement showing the Miscellaneous Services performed in the Workshops, &c.—*continued.*

Number of Order.	DESCRIPTION.	Numbers.	Labour.	Material.	Indirect Expenditure.	TOTAL per Balance Sheet, No. 1.	TOTAL per Balance Sheet, No. 2.
	Miscellaneous Services—*continued.*		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
59. 96, 97, 136. 139.	Drill second holes for friction pins in guns:						
	100-pounder, wrought iron S. B.	10					
	68-pounder, cast-iron S. B.	2					
	32-pounder, cast-iron S. B.	58					
	8-inch, cast-iron S. B.	39					
	6-pounder, bronze S. B.	6					
	9-inch M. L. R.	4					
	8-inch M. L. R.	20					
	7-inch M. L. R.	26					
	64-pounder, M. L. R.	16					
	Her Majesty's ship "Ganges" 18 May 1865 (57—2—12,779). 6-pounder iron	18					
	6-pounder brass	1					
	Her Majesty's ship "Vixen" 7-inch M. L. R.	2	5 4 2	- -	1 6 3	6 10 5	6 17 3½
	24-pounder howitzer	2					
	" " "Buzzard" 12-pounder howitzer	2					
	32-pounder gun	2					
	" " "Fervent" 32-pounder gun	2					
	" " "Squirrel" 6-pounder, iron	6					
	" " "Cambridge" 12-pounder howitzer	2					
	8-inch guns	2					
	" " "St. George" 12-pound howitzer	2					
	" " "Lion" 32-pounder gun	17					
	" " "Liverpool" 8-inch S. B.	20					
	64-pounder M. L. R.	6					
63	Withdraw adapters from 64 pounder M. L. R. shell	180	- 1 4	- -	- - 4	- 1 8	- 1 9
69	Examine and fit friction pins to guns in use of coast-guard at Fowey 30 April 1867 (Devonport—6—1,334).	2	1 13 -	- -	- 8 4	2 1 4	2 3 6
73	Assist artificer from Royal Carriage Department, Woolwich, in repairing Colonel Shaw's carriage on board H. M. S. "Prince Albert," including forging, turning, and slotting three new spindles, and forging and fitting eight new steel keys.	1	2 8 3	- 3 9	- 12 2	3 4 2	3 7 6½
81	Remove hooks from old chains of 10 tons crane, and attach them to new chains	2	- 1 7	- - 9¼	- - 5	- 2 9¼	- 2 11
84. 167. 182	Lay guns on board Her Majesty's ships—						
	"Liffey"	18					
	"Rattlesnake"	8					
	"Lord Warden"	14					
	"Liverpool" 7-inch M. L. R.	4	6 14 6	- 3 9½	1 13 11	8 12 2½	9 1 3½
	64-pounder M. L. R.	6					
	8-inch S. B.	20					

90. 119	Drill double friction pin holes, and holes for guide plates, and sight:						
	Gun, 6-pounder brass	12	– 8 9	- -	– 2 2½	– 10 11½	– 11 6½
	Howitzer, 24-pounder brass	1					
97*a*. 199	Sight smooth bore guns:						
	32-pounder, S. B.	15	1 12 4½	- -	– 8 2	2 – 6½	2 2 8½
	8-inch, S. B.	3					
	For H. M. S. "Lion," 32-pounder	17					
	For H. M. S. "Cambridge," 8-inch	2					
111. 171	Remove sights, &c. from guns on board Her Majesty's ships:						
	"Canopus"	3	– 8 9	- -	– 2 2½	– 10 11½	– 11 6½
	"Black Prince" 7-inch, B. L. R.	11					
	"Black Prince" 40-pounder "	4					
	"Black Prince" 20-pounder "	2					
	"Black Prince" 12-pounder "	1					
	"Waterwitch," 7-inch B. L. R.	2					
117. 203	Gauge and reduce to gauge—shot:						
	Hollow 7-inch, 90 lbs.	120	1 3 1	– – 8¾	– 5 10	1 9 7¾	1 11 2¾
	12-pounder, B. L. R., solid	300					
	9-pounder, B. L. R., solid	200					
	For H. M. S. "Vixen"	50					
	For H. M. S. "Cambridge"	196					
120. 143. 186. 185. 165. 170.	Examine stores returned from Her Majesty's ships:						
	"Princess Royal"	1	3 18 5	- -	– 19 9	4 18 2	5 3 4
	"Cambridge"	3					
	"Steady"	1					
	"Lion"	1					
	"Black Prince"	1					
	"Valorous"	1					
	"Triton"	1					
	"Aurora"	1					
	"Prince Consort"	1					
	"Liverpool"	1					
	Staddon Camp	1					
	Royal Marines	1					

No. 9.—Workshops, Gun Wharf, Devonport—(G.) Statement showing the Manufactures, Conversions, Repairs, &c.—*continued.*

Number of Order.	DESCRIPTION.	Numbers.	Labour.	Material.	Indirect Expenditure.	TOTAL per Balance Sheet, No. 1.	TOTAL per Balance Sheet, No. 2.
	Miscellaneous Services—*continued.*		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
123	Drill double friction pin-holes, enlarge top of vent, and fit friction pins to guns on board Her Majesty's ship "Donegal":						
	8-inch	34	1 3 11	- -	- 6 1	1 10 -	1 11 7¼
	32-pounder	34					
	6-pounder, brass	1					
144	Master artificer and one smith to go on board Her Majeety's ship "Pallas" in the Sound, and adjust front eccentric rollers of 8-inch iron slides, to the metals laid down by dockyard.	4	- 2 1¼	- -	- - 6½	- 2 7¾	- 2 9½
155	Reduce pivots on head blocks of iron slides from 18 to 14 inches, for Her Majesty's ships:						
	"Lord Warden," 7-inch, 6½ tons, M. L. R.	2	3 3 5	- -	- 16 -¼	3 19 5¼	4 3 7¼
	"Bellerophon," 7-inch, 6½ tons, M. L. R.	2					
156	Drill oval holes in brackets on rear of iron carriages, and make pins to prevent the rollers dropping out:						
	9-inch M. L. R.	3	8 9 11½	- 3 1½	2 3 1	10 16 2	11 7 7
	8-inch M. L. R.	16					
	7-inch M. L. R.	14					
159	Gauge and paint 7-inch chilled shot, for Her Majesty's ships:						
	"Lord Warden"	160	- 11 11	- 1 1¾	- 3 -	- 16 -¾	- 16 11
	"Liffey"	40					
160	Gauge, paint, and fix adapters, and papier-mache wads, in 64-pounder M. L. R. shell, for Her Majesty's ship "Rattlesnake."	300	- 12 1½	6 1 9¾	- 3 -½	6 16 11¾	7 4 2½
197	Re-vent guns for Her Majesty's ships:						
	"Cambridge," 7-inch, 6½ tons	1	1 9 1½	1 3 8	- 7 4	3 - 1½	3 3 3
	"Redwing," 64-pounder M. L. R.	2					
	"Ferret," 6-pounder, 17 cwt.	1					
	"Redwing," 7-inch, 6½ tons	1					
	1 January 1867 (57—2—16,918), and 15 February 1868 (73—3—8,410).						
213	Paint 68-pounder steel shot—						
	Red	247	- 11 3	- 5 4	- 2 10	- 19 5	1 - 5¼
	White	247					
	15 November 1867 (75—12—3,295), and 1 January 1868 (3,295).						

214	Examine and take impressions of guns on board H. M. ships, and for Royal Marines:						
	"Redwing" 7-inch M. L. R.	3					
	"Redwing" 64-pounder M. L. R.	3					
	"Impregnable" 6-pounder Brass	1					
	"Impregnable" 6-pounder Iron	24					
	"Ferrat" 6-pounder iron	8					
	"Cambridge" 64 pounder shunt	2					
	"Cambridge" 12-pounder B. L. R.	10					
	"Cambridge" 9-pounder B. L. R.	1	2 10 2½	- -	- 12 9	3 2 11½	3 6 3
	"Cambridge" 8-inch S. B.	10					
	"Cambridge" 32-pounder S. B.	14					
	"Cambridge" 12-pounder howitzer	2					
	"Cambridge" 6-pounder gun	6					
	"Prince Albert" 9-inch 12-tons	4					
	Royal Marines 40-pounder B. L. R.	6					
	Royal Marines 32-pounder S. B.	6					
20. 108. 115. 169. 204.	Repairs, &c. to War Department Vessels, Garrison and Departmental Boats, &c. &c.:						
	Make new hoop for main gaff	1					
	„ new wedges for mast-set	1					
	„ runner for bowsprit	1					
	Repair eyebolt chain	1					
	„ camp kettle	1					
	„ shoe to jibstay	1					
	„ pump stanchion	1					
	„ bow timber	1					
	„ stock of anchor	1					
	„ flooring	1					
	„ winch handles	2					
	„ pots' hook	5	8 13 7½	3 14 5	2 3 11¾	14 12 -¼	15 7 6
	„ caboose and funnel	1					
	„ iron hook for leading block	1					
	„ iron tackle plate	1					
	„ main-sheet block	1					
	„ funnel to cabin stove	1					
	„ copper hatch-bar	1					
	Fit 7-inch clump-block with iron strap and swivel hook	1					
	„ sheaves to masts of cutter	2					
	„ sheaves for cable	1					
	„ iron belaying pins in fore thwart	2					
	TOTALS - - - £.		126 10 11½	87 8 8	31 18 9½	245 18 5	258 17 7½

Examined, *James C. Hurst*,
Accountant, and Auditor to Manufacturing Departments.

W. L. Penno,
Superintendent of Stores.

No. 9.—WORKSHOPS, GUN WHARF, DEVONPORT—*continued.*

STATEMENT (H.)—CAPITAL ACCOUNT.—HER MAJESTY'S WORKSHOPS, GUN WHARF, DEVONPORT, for the Year 1867–8.

Dr.

	£	s.	d.
1st April 1867:			
For value of Buildings at this date, viz.:—			
Buildings	902	10	–
Machinery and plant	255	19	3
To Store Account:—			
For Miscellaneous Plant issued from Store, 1867–8	64	16	9¼
TOTAL £.	1,223	6	–¼

Cr.

				£.	s.	d.
31st March 1868:						
By Production Account:						
For One Year's depreciation, viz.:—	£.	s.	d.			
5 per cent. on Buildings	45	2	6			
10 per cent. on Machinery, &c.	25	11	11			
				70	14	5
By Balance:						
For Value of Buildings, Machines, &c., at this date, viz.:—						
Buildings				857	7	6
Machinery, Plant, &c.				295	4	1¼
TOTAL £.				1,223	6	–¼

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

W. L. Penno,
Superintendent of Stores.

— No. 10. —

ROYAL ARMY CLOTHING FACTORY, PIMLICO.

(A.)—BALANCE SHEET of the Royal Army Clothing Factory, Pimlico, for 1867-8.

Dr.

	£. s. d.	£. s. d.
To Cost of Buildings (original purchase)	30,000 – –	
„ „ „ added to 31st March 1867 - -	3,597 15 2	
„ „ Machinery - - - - -	3,045 18 –	
„ „ Tools and Implements - -	181 13 1	
„ Stock of Materials - - - - -	1,290 1 10½	
„ „ Semi-manufactured Goods -	878 14 11½	
„ „ Finished Goods for Appropriation - - - - - -	70 3 9	
„ „ *Miscellaneous Stores* - -	2,550 15 3¾	
		41,615 2 1¾
To Purchases:		
Buildings (New) - - - - -	—	
Machinery (New) - - - - -	—	
Tools and Implements (New) - -	76 5 1	
		76 5 1
To Repairs to Buildings - - -	—	
„ „ Machinery - - -	45 18 1	
„ „ Tools and Implements -	2 12 1	
		48 10 2
To Contract Clothing received from Storekeeper for Appropriation - -	40,415 3 4	
Materials - - - - - -	245,612 3 6¾	
Miscellaneous Stores - - -	615 14 7¼	
		286,643 1 6
To Charges and Expenses:		
Cost of Inspection of Material - -	960 – –	
Wages - - - - - - -	41,944 17 9½	
Cutting - - - - - - -	5,554 6 5½	
Ground Rent - - - - - -	356 – –	
Water Rate - - - - - -	49 13 4	
Insurance - - - - - -	78 6 –	
Salaries - - - - - - -	750 – –	
Medical Attendance - - -	85 5 –	
Lodging Allowances - - -	33 6 6	
Rental Value of Officers' Quarters -	100 – –	
Police - - - - - - -	298 3 2	
Gas - - - - - - -	482 16 4	
Fuel - - - - - - -	242 7 9½	
Stationery (not purchased on spot) -	80 – –	
Interest on Invested Capital - -	1,454 1 6	
„ „ Working „ - -	560 – –	
Miscellaneous - - - - - -	46 19 –	
To Annual Charge to repay the original outlay on Purchase of Lease in 75 years, at 3½ per cent. Compound Interest - - - - - - -	86 2 –	
To Annual Charge to repay Additions to Buildings on 31st March 1867, in 73 years, at 3½ per cent. Compound Interest - - - - - - -	10 12 2	
		53,172 17 –½
	£.	381,555 15 11¼

Cr.

	£. s. d.	£. s. d.
By Balance:		
Buildings (original purchase) -	30,000 – –	
Add—Additions, to 31st March 1867	3,597 15 2	
„ „ during 1867-68 -	—	
		33,597 15 2
Machinery on 1st April 1867 -	3,045 18 –	
Deduct—Depreciation at 10 per cent.	304 11 9	
		2,741 6 3
Add—Additions during 1867-68, *per contra* - - - - - -	—	
Tools and Implements on 1st April 1867 - - - - - - -	181 13 1	
Deduct—Depreciation at 10 per cent.	18 3 4	
	163 9 9	
Add—Additions during 1867-68, *per contra* - - - - - -	76 5 1	
		239 14 10
Materials in hand - - - -	—	
Finished Goods and Contract Clothing waiting Appropriation -	—	
Finished Goods and Contract Clothing Re-issued to Storekeeper -	40,485 7 1	
Miscellaneous Stores - - -	2,142 18 9	
		42,628 5 10
By Production of Articles Manufactured during the year, as per detailed Voucher (B) - - - - - -	267,857 12 8¼	
By Alterations and Repairs during the year, as per detailed Voucher (C) -	1,644 8 1½	
By Garments issued, Cut and Basted, as per detailed Voucher (D) - - -	9,807 9 3¾	
By Semi-manufactured Goods, as per detailed Voucher (E) - - - -	8,926 4 11¼	
By Materials Re-issued to Store Department, &c. - - - - - -	9,467 13 9½	
By Value of Cuttings issued to Storekeeper, and sold during the year -	4,645 5 –	
		302,348 13 10¼
	£.	381,555 15 11¼

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

J. H. Hudson,
Superintendent.

No. 10.—Royal Army Clothing Factory, Pimlico—*continued.*

STATEMENT (B.)—Garments Made up during the Year 1867–8.

Service and Description.	Number.	Cost of Material. Rate. s. d.	Cost of Material. £. s. d.	Labour. Cutting. Rate. s. d.	Labour. Cutting. £. s. d.	Labour. Making. Rate. Hand. s. d.	Labour. Making. Rate. Machine. s. d.	Labour. Making. £. s. d.	Labour. Total Direct Labour. £. s. d.	Indirect Expenditure. £. s. d.	Total Expenditure. £. s. d.	Rate per Garment. £. s. d.
Tunics:												
Foot Guards:												
Serjeant Majors	4	124 9	24 19 –	1 –	– 4 –	19 –	–	3 16 –	4 – –	– 14 3½	29 13 3½	7 8 3¾
Quartermaster Serjeants	1	92 10½	4 12 10½	1 –	– 1 –	19 –	–	– 19 –	1 – –	– 3 3¾	5 16 2¼	5 16 2¼
Ditto	5	91 9	22 18 9	1 –	– 5 –	19 –	–	4 15 –	5 – –	– 17 10½	28 16 7½	5 15 4
Regimental Clerks	1	84 6	4 4 6	1 –	– 1 –	19 –	–	– 19 –	1 – –	– 3 7¼	5 8 1¼	5 8 1¼
Rifle Instructors	5	87 –	21 15 –	1 –	– 5 –	19 –	–	4 15 –	5 – –	– 17 10½	27 12 10½	5 10 7
Pipe Majors	1	75 8	3 15 8	1 –	– 1 –	15 –	–	– 15 –	– 16 –	– 2 5	4 14 1	4 14 1
Drill Serjeants	1	66 6	3 6 6	– 9	– – 9	9 6	–	– 9 6	– 10 3	– 1 10	3 18 7	3 18 7
Ditto	10	67 7	33 15 10	– 9	– 7 6	9 6	–	4 15 –	5 2 6	– 18 3½	39 16 7½	3 19 8
Hospital Serjeants	1	66 6	3 6 6	– 9	– – 9	9 6	–	– 9 6	– 10 3	– 1 10	3 18 7	3 18 7
Orderly Room Clerks	3	66 6	9 19 6	– 9	– 2 3	9 6	–	1 8 6	1 10 9	– 5 6½	11 15 9½	3 18 7⅛
Drum Majors (without wings)	5	122 3	30 11 3	1 –	– 5 –	21 –	–	5 5 –	5 10 –	– 19 8½	37 – 11½	7 8 2⅜
Band Masters - ditto	1	134 6	6 14 6	1 –	– 1 –	19 –	–	– 19 –	1 – –	– 3 7¼	7 18 1¼	7 18 1¼
Ditto - ditto	3	133 10	20 1 6	1 –	– 3 –	19 –	–	2 17 –	3 – –	– 10 8¾	23 12 2¾	7 17 5
Band Serjeants - ditto	3	92 –	13 16 –	– 9	– 2 3	19 –	–	2 17 –	2 19 3	– 10 8	17 5 11	5 15 3⅝
Ditto - ditto	4	90 10	18 3 4	– 9	– 3 –	19 –	–	3 16 –	3 19 –	– 14 1¾	22 16 5¾	5 14 1½
Serjeants	47	56 –	131 12 –	– 9	1 15 3	8 6	–	19 19 6	21 14 9	3 18 7¾	157 5 4¾	3 6 11 1/12
Ditto	2	57 8	5 15 4	– 9	– 1 6	8 6	–	– 17 –	– 18 6	– 3 3¾	6 17 1¾	3 8 6⅞
Band (without wings)	58	75 6	218 19 –	– 9	2 3 6	12 6	–	36 5 –	38 8 6	6 18 4	264 5 10	4 11 1⅝
Ditto - ditto	78	76 11	299 19 6	– 9	2 18 6	12 6	–	48 15 –	51 13 6	9 4 4¾	360 17 4¾	4 12 6⅓
Time Beaters - ditto	6	113 6	34 1 –	– 9	– 4 6	21 –	–	6 6 –	6 10 6	1 3 5¾	41 14 11¾	6 19 2
Ditto - ditto	5	112 4	28 1 8	– 9	– 3 9	21 –	–	5 5 –	5 8 9	– 19 6	34 9 11	6 17 11¾
Pipers	nil.											
Drummers	214	28 6	304 19 –	– 6	5 7 –	9 6	–	101 13 –	107 – –	19 5 2½	431 4 2½	2 – 3⅝
Ditto	2	27 10	2 15 8	– 6	– 1 –	9 6	–	– 19 –	1 – –	– 3 7¼	3 19 3¼	1 19 7⅝
Privates	604	17 8	533 10 8	– 6	15 2 –	5 4	–	161 1 4	176 3 4	31 14 2½	741 8 2½	1 4 6⅝
Ditto	2,848	17 8	2,515 14 8	– 6	71 4 –	5 –	–	712 – –	783 4 –	140 19 6¼	3,439 18 2¼	1 4 1⅞
Undress, 1st Class	7	35 5	12 7 11	1 –	– 7 –	8 –	–	2 16 –	3 3 –	– 10 4	16 1 3	2 5 10 5/7
Ditto - ditto	17	34 3	29 2 3	1 –	– 17 –	8 –	–	6 16 –	7 13 –	1 7 7¼	38 2 10¼	2 4 10½
Undress, 2nd Class	1	33 2	1 13 2	– 9	– – 9	7 –	–	– 7 –	– 7 9	– 1 4¾	2 2 3¾	2 2 3¾
Ditto - ditto	10	34 3	17 2 6	– 9	– 7 6	7 –	–	3 10 –	3 17 6	– 13 9¼	21 13 9¼	2 3 4½

Infantry, Line:																								
Officers	1	50	–	2	10	–	1	–	–	1	–	21	–	–	1	1	–	1	2	–	–	3	11½	3	15	11½	3	15	11½
Staff (without chevrons)	35	41	10	73	4	2	–	8	1	3	4	8	–	–	14	–	–	15	3	4	2	16	5	91	3	11	2	12	1⅜
Band Serjeants (without chevrons)	1	41	1	2	1	1	–	8	–	–	8	8	–	–	–	8	–	–	8	8	–	1	6½	2	11	3½	2	11	3½
Colour Serjeants	2	20	11	2	1	10	–	6½	–	1	1	6	–	–	–	12	–	–	13	1	–	2	4½	2	17	3½	1	8	7⅝
Serjeants	2	17	–	1	14	–	–	6½	–	1	1	4	9	–	–	9	6	–	10	7	–	1	10¾	2	6	5¾	1	3	2⅞
Ditto	190	17	4¾	165	5	2½	–	6½	5	2	11	5	3	–	49	17	6	55	–	5	9	18	–¾	230	3	8¼	1	4	2¾
Ditto	409	17	1¾	350	12	7¾	–	6½	11	1	6½	5	–	–	102	5	–	113	6	6½	20	7	11¾	484	7	2	1	3	8⅕
Ditto	114	16	10¾	96	6	1½	–	6½	3	1	9	4	9	–	27	1	6	30	3	3	5	8	7	131	17	11½	1	3	1⅝
Ditto (with gold chevrons)	26	19	2¾	24	19	11½	–	6½	–	14	1	6	–	–	7	16	–	8	10	1	1	10	7¼	35	–	7¾	1	6	11 5/13
Lance Serjeants	2	15	7	1	11	2	–	3½	–	–	7	4	–	–	–	8	–	–	8	7	–	1	6½	2	1	3½	1	–	7¾
Ditto	1	15	7	–	15	7	–	3½	–	–	3½	4	4	–	–	4	4	–	4	7½	–	–	10	1	1	–½	1	1	–½
Ditto	3	15	7	2	6	9	–	3½	–	–	10½	3	11½	–	–	11	10½	–	12	9	–	2	3½	3	1	9½	1	–	7⅛
Lance Corporals	4	15	5	3	1	8	–	3½	–	1	2	3	6	–	–	14	–	–	15	2	–	2	8¾	3	19	6¾	–	19	10¾
Ditto	1	15	5	–	15	5	–	3½	–	–	3½	4	–	–	–	4	–	–	4	3½	–	–	9¼	1	–	5¾	1	–	5¾
Ditto	2	15	5	1	10	10	–	3½	–	–	7	3	9	–	–	7	6	–	8	1	–	1	5½	2	–	4½	1	–	2¼
Band	47	15	7½	36	14	4½	–	6½	1	5	5½	5	–	–	11	15	–	13	–	5½	2	6	10¾	52	1	8¾	1	2	2
Corporals, Drummers	1	18	11	–	18	11	–	4½	–	–	4½	5	3	–	–	5	3	–	5	7½	–	1	–	1	5	6½	1	5	6½
Ditto	1	18	11	–	18	11	–	4½	–	–	4½	5	1½	–	–	5	1½	–	5	6	–	–	11¾	1	5	4¾	1	5	4¾
Ditto	1	18	11	–	18	11	–	4½	–	–	4½	5	3½	–	–	5	3½	–	5	8	–	1	–¼	1	5	7¼	1	5	7¼
Drummers	2	19	8	1	19	4	–	4½	–	–	9	5	–	–	–	10	–	–	10	9	–	1	10¾	2	11	11¾	1	6	–
Ditto	198	18	9	185	12	6	–	4½	3	14	3	5	–	–	49	10	–	53	4	3	9	11	6¾	248	8	3¾	1	5	1⅔
Privates	224	15	6	173	12	–	–	3½	3	5	4	3	4	–	37	6	8	40	12	–	7	4	9	221	8	9	–	19	9¼
Ditto (with good conduct badges).	4	15	7¼	3	2	5	–	3½	–	1	2	3	7	–	–	14	4	–	15	6	–	2	9½	4	–	8½	1	–	2⅛
Ditto (complete)	13,177	15	4¼	10,116	1	10¼	–	3½	192	3	3½	3	4	–	2,196	3	4	2,388	6	7½	429	17	8¼	12,934	6	2	–	19	7 9/16
Ditto (without facings)	2	13	2	1	6	4	–	3½	–	–	7	2	–	–	–	4	–	–	4	7	–	–	9¼	1	11	8¼	–	15	10⅛
Ditto (with corporals' chevrons)	1	15	6	–	15	6	–	3½	–	–	3½	3	5½	–	–	3	5½	–	3	9	–	–	8	–	19	11	–	19	11
Ditto (with chevrons and good conduct badges).	6	15	8	4	14	–	–	3½	–	1	9	3	8	–	1	2	–	1	3	9	–	4	3¼	6	2	–¼	1	–	4⅞
Ditto (with chevrons)	1	15	6¾	–	15	6¾	–	3½	–	–	3½	3	6½	–	–	3	6½	–	3	10	–	–	8¼	1	–	1	1	–	1
Ditto (with good conduct badges).	1	15	5¼	–	15	5¼	–	3½	–	–	3½	3	5	–	–	3	5	–	3	8½	–	–	8	–	19	9¾	–	19	9¾
Ditto (with chevrons and good conduct badges).	1	15	7¾	–	15	7¾	–	3½	–	–	3½	3	7½	–	–	3	7½	–	3	11	–	–	8¼	1	–	3	1	–	3
Ditto (without straps or buttons)	90	14	6	65	5	–	–	3½	1	6	3	3	–	–	13	10	–	14	16	3	2	13	3¾	82	14	6¾	–	18	4⅘
Ditto (with corporals' chevrons)	1	15	8½	–	15	8½	–	3½	–	–	3½	3	10	–	–	3	10	–	4	1½	–	–	8½	1	–	6½	1	–	6½
Infantry, Militia:																													
Staff (without chevrons)	213	40	–	426	–	–	–	8	7	2	–	8	–	–	85	4	–	92	6	–	16	12	3¼	534	18	3¼	2	10	2¾
Band Serjeants (without chevrons)	4	39	3	7	17	–	–	8	–	2	8	8	–	–	1	12	–	1	14	8	–	6	3	9	17	11	2	9	5¾

No. 10.—Royal Army Clothing Factory, Pimlico—Statement (B.) Garments Made up during the Year 1867–8—*continued.*

Service and Description.	Number.	Cost of Material. Rate.	Cost of Material.	Labour. Cutting. Rate.	Labour. Cutting.	Labour. Making. Rate. Hand.	Labour. Making. Rate. Machine.	Labour. Making.	Labour. Total Direct Labour.	Indirect Expenditure.	Total Expenditure.	Rate per Garment.
		s. d.	£. s. d.	s. d.	£. s. d.	s. d.		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Tunics—*continued.*												
Infantry, Militia:												
Serjeants	7	17 –½	5 19 3½	– 6½	– 3 9½	5 3	–	1 16 9	2 – 6½	– 7 3½	8 7 1½	1 3 10½
Ditto	1,110	16 6½	918 1 3	– 6½	30 1 3	4 9	–	263 12 6	293 13 9	52 17 3	1,264 12 3	1 2 9⅖
Band	166	15 3¼	126 14 11½	– 6½	4 9 11	5 –	–	41 10 –	45 19 11	8 5 7	181 – 5½	1 1 9 14/17
Drummers	367	18 9	344 1 3	– 4½	6 17 7½	5 –	–	91 15 –	98 12 7½	17 15 1	460 8 11½	1 5 1 1/9
Privates	4,117	15 –	3,087 15 –	– 3½	60 – 9½	–	3 3	669 – 3	729 1 –½	131 4 7	3,948 – 7½	– 19 2 1/7
Ditto	5,405	15 –	4,053 15 –	– 3½	78 16 5½	3 4	–	900 16 8	979 13 1½	176 6 7	5,209 14 8½	– 19 3 1/3
Rifles, Line:												
Staff Serjeants	10	32 11	16 9 2	– 8	– 6 8	18 –	–	9 – –	9 6 8	1 13 7¼	27 9 5¼	2 14 11¼
Serjeants (Ross Rifle Highland)	15	18 6	13 17 6	– 6½	– 8 1½	8	–	6 – –	6 8 1½	1 3 –¾	21 8 8¼	1 8 6 14/15
Ditto	156	18 –½	140 14 6	– 6½	4 4 6	6 –	–	46 16 –	51 – 6	9 3 10¾	200 18 10¾	1 5 9 1/7
Ditto	200	17 6½	175 8 4	– 6½	5 8 4	5 3	–	52 10 –	57 18 4	10 8 6	243 15 2	1 4 4½
Lance Corporals	1	17 7½	– 17 7½	– 3½	– – 3½	3 8	–	– 3 8	– 3 11½	– – 8½	1 2 3½	1 2 3½
Band	16	17 11½	14 7 4	– 6½	– 8 8	6 –	–	4 16 –	5 4 8	– 18 10	20 10 10	1 5 8⅛
Buglers, Corporals	3	18 1	2 14 3	– 6½	– 1 7½	8 –	–	1 4 –	1 5 7½	– 4 7½	4 4 6	1 8 2
Buglers	96	17 11	86 – –	– 6½	2 12 –	6 –	–	28 16 –	31 8 –	5 13 –½	123 1 –½	1 5 7⅝
Ditto	3	18 5	2 15 3	– 6½	– 1 7½	8 –	–	1 4 –	1 5 7½	– 4 7¼	4 5 5¾	1 8 6
Privates (Rifle Brigade)	2,622	17 6½	2,299 14 3	– 3½	38 4 9	3 4	–	437 – –	475 4 9	85 10 10¼	2,860 9 10¼	1 1 9⅞
Ditto (60th Rifles)	1,855	17 5	1,615 7 11	– 3⅓	27 1 –½	3 6	–	324 12 6	351 13 6½	63 6 –½	2,030 7 6	1 1 10 11/16
Ditto (without buttons)	160	17 2	137 6 8	– 3½	2 6 8	3 2	–	25 6 8	27 13 4	4 19 7	169 19 7	1 1 3
Ditto (without straps)	718	17 1	613 5 10	– 3½	10 9 5	2 10	–	101 14 4	112 3 9	20 3 5¾	745 13 –¾	1 – 9 7/16
Ditto	75	17 6½	65 15 7½	– 3½	1 1 10½	–	3 3	12 3 9	13 5 7½	2 7 9¾	81 9 –¾	1 1 8⅝
Rifles, Militia:												
Staff	73	32 11	120 2 11	– 8	2 8 8	18 –	–	65 14 –	68 2 8	12 5 8¼	200 11 3¼	2 14 11⅜
Serjeants	297	17 2¼	255 4 8¼	– 6½	8 – 10½	5 3	–	77 19 3	86 – 1½	15 9 7½	356 14 5¼	1 4 –¼
Band	12	17 7¼	10 11 3	– 6½	– 6 6	6 –	–	3 12 –	3 18 6	– 14 1½	15 3 10½	1 5 3⅞
Buglers	127	17 6¾	111 10 5¼	– 6½	3 8 9½	6 –	–	38 2 –	41 10 9½	7 9 6½	160 10 9¼	1 5 3 1/3
Privates	1,315	17 2¼	1,130 1 6¾	– 3½	19 3 6½	3 6	–	230 2 6	249 6 –½	44 17 5¾	1,424 5 1	1 1 7 15/16
Highland, Line:												
Staff (with badges)	1	45 2¼	2 5 2¼	– 8½	– – 8½	12 –	–	– 12 –	– 12 8½	– 2 3½	3 – 2¼	3 – 2¼
Colour Serjeants	1	19 5½	– 19 5½	– 7	– – 7	7 –	–	– 7 –	– 7 7	– 1 4	1 8 4½	1 8 4½
Serjeants (Ross Rifle Highland)	1	19 5½	– 19 5½	– 7	– – 7	7 –	–	– 7 –	– 7 7	– 1 4	1 8 4½	1 8 4½

Serjeants (with chevrons) - -	10	18	6¾	9	5	7½	–	7	–	5	10	6	8	–	3	6	8	3	12	6	–	13	–¾	13	11	2¼	1	7	1½
Ditto (without chevrons) -	246	18	–¾	222	3	4½	–	7	7	3	6	6	2	–	75	17	–	83	–	6	14	18	10½	320	2	9	1	6	–½
Ditto - - - - -	1	18	9	–	18	9	–	7	–	–	7	8	2	–	–	8	2	–	8	9	–	1	7	1	9	1	1	9	1
Band - - - - -	15	16	10¼	12	12	9¾	–	7	–	8	9	6	8	–	5	–	–	5	8	9	–	19	7	19	1	1¾	1	5	4⅞
Pipers - - - - -	1	15	6	–	15	6	–	7	–	–	7	4	8	–	–	4	8	–	5	3	–	–	11¼	1	1	8¼	1	1	8¼
Drummers - - - - -	7	20	7	7	4	1	–	4½	–	2	7½	6	8	–	2	6	8	2	9	3½	–	8	10	10	2	2½	1	8	10⅝
Ditto (without facings or lace).	6	16	7	4	19	6	–	4½	–	2	3	4	6	–	1	7	–	1	9	3	–	5	3¼	6	14	–¼	1	2	4
Ditto (complete) - - -	102	20	–	102	–	–	–	4½	1	18	3	6	8	–	34	–	–	35	18	3	6	9	3½	144	7	6½	1	8	3 12/17
Privates (complete) - - -	4,069	16	5	3,339	19	5	–	4	67	16	4	4	8	–	949	8	8	1,017	5	–	183	2	1	4,540	6	6	1	2	3⅘
Ditto (without straps or buttons).	75	15	11	59	13	9	–	4	1	5	–	4	2	–	15	12	6	16	17	6	3	–	9	79	12	–	1	1	2¾
Ditto (without facings or buttons).	201	14	2	142	7	6	–	4	3	7	–	3	–	–	30	3	–	33	10	–	6	–	7¼	181	18	1¼	–	18	1⅕
Ditto (with corporals' chevrons)	2	16	8	1	13	4	–	4	–	–	8	5	–	–	–	10	–	–	10	8	–	1	11	2	5	11	1	2	11½
Highland Militia:																													
Staff (without badges) - - -	15	43	6	32	12	6	–	8½	–	10	7½	12	–	–	9	–	–	9	10	7½	1	14	3¾	43	17	5¼	2	18	6
Band Serjeants (without badges) -	1	43	–	2	3	–	–	8½	–	–	8½	12	–	–	–	12	–	–	12	8½	–	2	3½	2	18	–	2	18	–
Serjeants - - - - -	62	17	8½	54	17	11	–	7	1	16	2	6	8	–	20	13	4	22	9	6	4	–	11	81	8	4	1	6	3⅙
Band - - - - -	5	16	6	4	2	6	–	7	–	2	11	6	8	–	1	13	4	1	16	3	–	6	6	6	5	3	1	5	–½
Pipers - - - - -	1	15	1¾	–	15	1¾	–	7	–	–	7	4	8	–	–	4	8	–	5	3	–	–	11¼	1	1	4	1	1	4
Drummers - - - - -	19	20	5	19	7	11	–	4½	–	7	1½	6	8	–	6	6	8	6	13	9½	1	4	1	27	5	9½	1	8	8 13/19
Privates - - - - -	325	16	–¾	261	–	3¾	–	4	5	8	4	4	8	–	75	16	8	81	5	–	14	12	6	356	17	9¾	1	1	11⅝
Commissariat Staff Corps:																													
Staff Serjeants - - - -	1	41	9	2	1	9	–	8	–	–	8	9	–	–	–	9	–	–	9	8	–	1	5½	2	12	10½	2	12	10½
Serjeants - - - - -	25	25	5	31	15	5	–	6½	–	13	6½	5	6	–	6	17	6	7	11	–½	1	7	2	40	13	7½	1	12	6½
Ditto - - - - -	33	25	1	41	7	9	–	6½	–	17	10½	5	2	–	8	10	6	9	8	4½	1	13	11	52	10	–½	1	11	9¾
Buglers - - - - -	4	19	3	3	17	–	–	3½	–	1	2	6	–	–	1	4	–	1	5	2	–	4	6¼	5	6	8¼	1	6	8 1/16
Privates - - - - -	85	17	3	73	6	3	–	3½	1	4	9½	3	6	–	14	17	6	16	2	3½	2	17	–¾	92	5	7¼	1	1	8½
Ditto - - - - -	177	17	2	151	18	6	–	3½	2	11	7½	3	6	–	30	19	6	33	11	1½	6	–	9¾	191	10	5½	1	1	7¾
Ditto - - - - -	63	16	10¼	53	1	9¾	–	3½	–	18	4½	3	2	–	9	19	6	10	17	10½	1	19	2½	65	18	10¾	1	–	11⅕
Army Hospital Corps:																													
Serjeants - - - - -	16	23	1	18	9	4	–	6½	–	8	8	5	–	–	4	–	–	4	8	8	–	15	11½	23	13	11½	1	9	7½
Ditto - - - - -	111	20	10½	115	17	1½	–	6½	3	–	1½	4	9	–	26	7	3	29	7	4½	5	6	6¾	150	11	–¾	1	7	1½
Lance Serjeants - - - -	9	16	9¾	7	11	3¾	–	3½	–	2	7½	3	5	–	1	10	9	1	13	4½	–	6	–¼	9	10	8½	1	1	2¼
Corporals - - - - -	3	16	8½	2	10	1½	–	3½	–	–	10½	3	6	–	–	10	6	–	11	4½	–	2	–¾	3	3	6¾	1	1	2¼
Privates - - - - -	675	16	6½	558	5	7½	–	3½	9	16	10½	3	4	–	112	10	–	122	6	10½	22	–	5¼	702	12	11¾	1	–	9⅘
Ditto - - - - -	13	16	6½	10	15	–½	–	3½	–	3	9½	3	5		2	4	5	2	8	2½	–	8	8	13	11	11	1	–	11

No. 10.—Royal Army Clothing Factory, Pimlico—Statement (B.) Garments Made up during the Year 1867–8—*continued.*

Service and Description.	Number.	Cost of Material. Rate.	Cost of Material.	Labour. Cutting. Rate.	Labour. Cutting.	Labour. Making. Rate. Hand.	Labour. Making. Rate. Machine.	Labour. Making.	Labour. Total Direct Labour.	Indirect Expenditure.	Total Expenditure.	Rate per Garment.
Tunics—*continued.*		s. d.	£. s. d.	s. d.	£. s. d.	s. d.	s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Military Store Clerks:												
2nd Class	3	28 11¼	4 6 9¾	– 6½	– 1 7½	7 –	–	1 1 –	1 2 7½	– 4 1	5 13 6¼	1 17 10 1/12
Ditto	2	28 11¼	2 17 10½	– 6½	– 1 1	5 –	–	– 10 –	– 11 1	– 2 –	3 10 11½	1 15 5¾
Provost:												
Serjeants	1	31 8½	1 11 8½	– 6½	– – 6½	7 –	–	– 7 –	– 7 6½	– 1 2¼	2 – 5¼	2 – 5¼
Ditto	1	31 8½	1 11 8½	– 6½	– – 6½	4 –	–	– 4 –	– 4 6½	– – 9¾	1 17 –¾	1 17 –¾
Ditto	4	31 8½	6 6 10	– 6½	– 2 2	–	5 –	1 – –	1 2 2	– 3 11¾	7 12 11¾	1 18 3
Fire Brigade:												
Serjeants	1	17 7	– 17 7	– 7	– – 7	–	3 6	– 3 6	– 4 1	– – 9	1 2 5	1 2 5
Privates	10	17 4	8 13 4	– 7	– 5 10	–	3 3	1 12 6	1 18 4	– 6 10¾	10 18 6¾	1 1 10¼
Garrison Districts:												
Serjeants	2	20 11	2 1 10	– 6½	– 1 1	5 3	–	– 10 6	– 11 7	– 2 1	2 15 6	1 7 9
Staff Serjeants (without chevrons)	1	42 9½	2 2 9½	– 8	– – 8	8 –	–	– 8 –	– 8 8	– 1 6¾	2 13 –¼	2 13 –¼
Cape Mounted Rifles:												
Staff	1	38 4	1 18 4	– 8	– – 8	21 –	–	1 1 –	1 1 8	– 3 10¾	3 3 10¾	3 3 10¾
Ditto	2	38 4	3 16 8	– 8	– 1 4	18 –	–	1 16 –	1 17 4	– 6 8½	6 – 8½	3 – 4¼
Serjeants	40	29 3½	58 11 8	– 6½	1 1 8	7 –	–	14 – –	15 1 8	2 14 3¾	76 7 7¾	1 18 2¼
Trumpeters	10	16 8	8 6 8	– 3½	– 2 11	6 –	–	3 – –	3 2 11	– 11 3¾	12 – 10¾	1 4 1 1/14
Privates	451	16 5¾	371 12 1¼	– 3½	6 11 6½	6 –	–	135 6 –	141 17 6½	25 10 9¼	539 – 5	1 3 10⅞
Hussars:												
Staff Serjeants	2	104 9	10 9 6	– 8	– 1 4	16 –	–	1 12 –	1 13 4	– 6 –	12 8 10	6 4 5
Privates	2	20 2	2 – 4	– 6½	– 1 1	6 –	–	– 12 –	– 13 1	– 2 4¼	2 15 9¼	1 7 10⅝
Military Clerks:												
1st Class	1	42 9½	2 2 9½	– 8	– – 8	8 –	–	– 8 –	– 8 8	– 1 6¾	2 13 –¼	2 13 –¼
2nd Class	6	20 –	6 – –	– 6½	– 3 3	5 3	–	1 11 6	1 14 9	– 6 3	8 1 –	1 6 10

Dragoon Guards:													
Trumpeters (without cross trumpets).	2	18 1	1 16 2	– 3½	– – 7	3 6	–	– 7 –	– 7 7	– 1 4	2 5 1	1 2 6½
Trumpeters (without cross trumpets).	1	18 1	– 18 1	– 3½	– – 3½	4 –	–	– 4 –	– 4 3½	– – 9¼	1 3 1¾	1 3 1¾
Privates - - - - -	4	17 8	3 10 8	– 3½	– 1 2	3 6	–	– 14 –	– 15 2	– 2 8¾	4 8 6¾	1 2 1¾
Zouave Regiments:													
Pattern Serge - - - -	1	9 1	– 9 1	– 3½	– – 3½	3 4	–	– 3 4	– 3 7½	– – 7¾	– 13 4¼	– 13 4¼
Dragoons:													
Privates - - - - -	1	20 2	1 – 2	– 3½	– – 3½	3 6	–	– 3 6	– 3 9½	– – 8¼	1 4 7¾	1 4 7¾
Frock Coats:													
Enrolled Pensioners:													
Staff Serjeants (without chevrons)	57	34 2	97 7 6	– 7½	1 15 7½	7 –	–	19 19 –	21 14 7½	3 18 3	123 – 4½	2 3 2
Ditto - - ditto - -	52	34 2	88 16 8	– 7½	1 12 6	–	7 –	18 4 –	19 16 6	3 11 4¼	112 4 6¼	2 3 2
Serjeants - - - - - -	157	25 3	198 4 3	– 6½	4 5 –½	4 3	–	33 7 3	37 12 3½	6 15 5	242 11 11½	1 10 10⅞
Ditto - - - - - -	85	25 3	107 6 3	– 6½	2 6 –½	–	4 3	18 1 3	20 7 3½	3 13 3¾	131 6 10¼	1 10 10¾
Corporals - - - - - -	36	21 5	38 11 –	– 5½	– 16 6	3 5	–	6 3 –	6 19 6	1 5 1¼	46 15 7¼	1 6 –
Ditto - - - - - -	2	21 5	2 2 10	– 5½	– – 11	–	3 4	– 6 8	– 7 7	– 1 4	2 11 9	1 5 10½
Ditto - - - - - -	30	21 5	32 2 6	– 5½	– 13 9	–	3 5	5 2 6	5 16 3	– 19 1½	38 17 10½	1 5 11⅛
Privates - - - - - -	291	21 3	309 3 9	– 5½	6 13 4½	3 3	–	47 5 9	53 19 1½	9 14 4	372 17 2½	1 5 7½
Ditto - - - - - -	1	21 3	1 1 3	– 5½	– – 5½	4 –	–	– 4 –	– 4 5½	– – 9½	1 6 6	1 6 6
Ditto - - - - - -	4	21 3	4 5 –	– 5½	– 1 10	6 –	–	1 4 –	1 5 10	– 4 7¾	5 15 5¾	1 8 10½
Ditto - - - - - -	554	21 3	588 12 6	– 5½	12 13 11	–	3 3	90 – 6	102 14 5	18 9 9½	709 16 8½	1 5 7½
Ditto - - - - - -	1	21 3	1 1 3	– 5½	– – 5½	–	3 5	– 3 5	– 3 10½	– – 8¼	1 5 9¾	1 5 9¾
Military Prisons:													
Chief Warders - - - -	4	35 0	7 3 –	– 7½	– 2 6	12 –	–	2 8 –	2 10 6	– 9 1	10 2 7	2 10 7¾
Warders - - - - - -	31	26 1	40 8 7	– 6½	– 16 9½	8 –	–	12 8 –	13 4 9½	2 9 5½	56 2 10	1 16 2⅝
Ditto - - - - - -	16	26 1	20 17 4	– 6½	– 8 8	–	7 –	5 12 –	6 – 8	1 1 8¾	27 19 8¾	1 15 –
Librarians:													
Garrison (without chevrons) -	6	25 3¾	7 11 10½	– 6½	– 3 3	5 –	–	1 10 –	1 13 3	– 5 11¾	9 11 1¾	1 11 10
Ditto - ditto - -	1	25 3¾	1 5 3¾	– 6½	– – 6½	–	5 –	– 5 –	– 5 6½	– 1 –	1 11 10¼	1 11 10¼
Foot Guards:													
Jackets:													
Serjeants - - - - - -	103	10 6	54 1 6	– 6	2 11 6	2 2	–	11 3 2	13 14 8	2 9 5¼	70 5 7¼	– 13 7¾
Ditto - - - - - -	114	11 4½	64 16 9	– 6	2 17 –	2 8	–	15 4 –	18 1 –	3 4 11¾	86 2 8¾	– 15 1⅓
Pipers - - - - - -	5	10 6	2 12 6	– 6	– 2 6	2 2	–	– 10 10	– 13 4	– 2 4¾	3 8 2¾	– 13 7¾
Privates - - - - - -	4	5 9	1 3 –	– 3½	– 1 2	1 3	–	– 5 –	– 6 2	– 1 1¼	1 10 3¼	– 7 6¾
Ditto - - - - - -	5,219	5 9¼	1,505 17 11¾	– 3½	76 2 2½	1 3	–	326 3 9	402 5 11½	72 8 5¼	1,980 12 4½	– 7 7 1/13

No. 10.—Royal Army Clothing Factory, Pimlico—Statement (B.) Garments Made up during the Year 1867-8.

Service and Description.	Number.	Cost of Material. Rate.	Cost of Material.	Labour. Cutting. Rate.	Labour. Cutting.	Labour. Making. Rate. Hand.	Labour. Making. Rate. Machine.	Labour. Making.	Labour. Total Direct Labour.	Indirect Expenditure.	Total Expenditure.	Rate per Garment.
Jackets—*continued.*												
Infantry Line:												
		s. d.	£. s. d.	s. d.	£. s. d.	s. d.	s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Staff Serjeants	2	25 3	2 10 6	– 3½	– – 7	4 –	–	– 8 –	– 8 7	– 1 6½	3 – 7½	1 10 3¾
Ditto	4	24 9	4 19 –	– 3½	– 1 2	3 11	–	– 15 8	– 16 10	– 3 –½	5 18 10½	1 9 8½
Ditto	1	21 7	1 1 7	– 3½	– – 3½	3 6	–	– 3 6	– 3 9½	– – 8¼	1 6 –¾	1 6 –¾
Ditto	2	22 1	2 4 2	– 3½	– – 7	3 9	–	– 7 6	– 8 1	– 1 5¼	2 13 8¼	1 6 10⅛
Serjeants	53	11 4	30 – 8	– 2½	– 11 –½	2 3	–	5 19 3	6 10 3½	1 3 5¼	37 14 4¾	– 14 2⅞
Ditto	155	11 1	85 17 11	– 2½	1 12 3½	2 –	–	15 10 –	17 2 3½	3 1 7¼	106 1 9¾	– 13 8¼
Band	97	9 4½	45 9 4½	– 2½	1 – 2½	1 9	–	8 9 9	9 9 11½	1 14 1	56 13 5	– 11 8⅕
Corporals	1	9 8¾	– 9 8¾	– 2	– – 2	2 5	–	– 2 5	– 2 7	– – 5½	– 12 9¼	– 12 9¼
Ditto	1	9 8¾	– 9 8¾	– 2	– – 2	2 2	–	– 2 2	– 2 4	– – 5	– 12 5¾	– 12 5¾
Ditto	1	9 8¾	– 9 8¾	– 2	– – 2	1 10	–	– 1 10	– 2 –	– – 4¼	– 12 1	– 12 1
Privates	13,887	9 9¼	6,784 7 6¾	– 2	115 14 6	1 6	–	1,041 10 6	1,157 5 –	208 6 1¼	8,149 18 8	– 11 8⅞
Ditto	106	9 8¼	51 6 10½	– 2	– 17 8	1 5	–	7 10 2	8 7 10	1 10 2½	61 4 11	– 11 6⅝
Ditto (without facings)	2,327	8 11½	1,042 6 –½	– 2	19 7 10	– 10	–	96 19 2	116 7 –	20 18 10¼	1,179 11 10¾	– 10 1⅗
Infantry, Militia:												
Staff Serjeants	55	25 2	69 4 2	– 3½	– 16 –½	4 –	–	11 – –	11 16 –½	2 2 5¾	83 2 8¼	1 10 1¾
Band Serjeants	1	20 6	1 – 6	– 3½	– – 3½	3 9	–	– 3 9	– 4 –½	– – 8¾	1 5 3¼	1 5 3¼
Ditto	1	20 6	1 – 6	– 3½	– – 3½	3 6	–	– 3 6	– 3 9½	– – 8¼	1 4 11¾	1 4 11¾
Colour Serjeants	45	13 –	29 5 –	– 2½	– 9 4½	2 3	–	5 1 3	5 10 7½	– 19 11	35 15 6½	– 15 10¾
Serjeants	295	10 10	159 15 10	– 2½	3 1 5½	1 9	–	25 16 3	28 17 8½	5 4 –	193 17 6½	– 13 1¾
Ditto	208	11 1	115 5 4	– 2½	2 3 4	2 –	–	20 16 –	22 19 4	4 2 8	142 7 4	– 13 8 7/26
Band	363	9 4	169 8 –	– 2½	3 15 7½	1 9	–	31 15 3	35 10 10½	6 7 11¾	211 6 10¼	– 11 7⅝
Privates, (without facings)	3,160	8 11½	1,415 8 4	– 2	26 6 8	– 10	–	131 13 4	158 – –	28 8 ¹½	1,601 17 1½	– 10 1⅝
Ditto	6	9 8¾	2 18 6⅓	– 2	– 1 –	1 11	–	– 11 6	– 12 6	– 2 3	3 13 3½	– 12 2⅓
Ditto	13,287	9 9¼	6,491 5 –¾	– 2	110 14 6	–	1 6	996 10 6	1,107 5 –	199 6 1¼	7,797 16 2	– 11 8 6/7
Ditto (without facings)	1,543	8 11½	691 2 8½	– 2	12 17 2	–	– 10	64 5 10	77 3 –	13 17 9	782 3 5½	– 10 1⅞
Rifles, Line:												
Staff Serjeants (with chevrons and badges).	2	21 9	2 3 6	– 3½	– – 7	6 –	–	– 12 –	– 12 7	– 2 3	2 18 4	1 9 2
Serjeants	4	11 6¾	2 6 3	– 2½	– – 10	2 3	–	– 9 –	– 9 10	– 1 9	2 17 10	– 14 5½
Privates	1,098	10 10¾	598 3 7½	– 2	9 3 –	1 9	–	96 1 6	105 4 6	18 18 9¾	722 6 11¼	– 13 1⅞
Ditto	448	10 10¾	244 1 4	– 2	3 14 8	1 6	–	33 12 –	37 6 8	6 14 4¾	288 2 4¾	– 12 10⅓

Rifle Militia:															
Staff Serjeants (with chevrons and badges).	16	21 9	17 8 –	– 3½	– 4 8	6 –	–	4 16 -	5 – 8	– 18 1½	23 6 9½	1 9 2 1/16
Serjeants - - - - -	87	11 6¾	50 5 11¼	– 2½	– 18 1½	2 3	–	9 15 9	10 13 10½	1 18 6	62 18 3¾	– 14 5½
Band - - - - -	30	11 2½	16 16 3	– 2½	– 6 3	1 9	–	2 12 6	2 18 9	– 10 6¾	20 5 6¾	– 13 6 1/5
Buglers - - - - -	12	11 4¾	6 16 9	– 2½	– 2 6	1 9	–	1 1 –	1 3 6	– 4 3	8 4 6	– 13 8½
Privates - - - - -	914	10 10¾	497 18 9½	– 2	7 12 4	1 6	–	68 11 –	76 3 4	13 14 2	587 16 3½	– 12 10 1/3
Ditto (without facings) - -	599	10 1	301 19 11	– 2	4 19 10	– 11	–	27 9 1	32 8 11	5 16 9¾	340 5 7¾	– 11 4 1/6
Ditto - (ditto) - - -	96	10 1	48 8 –	– 2	– 16 –	–	– 10	4 – –	4 16 –	– 17 3	54 1 3	– 11 3 1/6
Ditto - - - - - -	560	10 10¾	305 1 8	– 2	4 13 4	–	1 9	49 – –	53 13 4	9 13 2	368 8 2	– 13 1 7/8
Ditto - - - - - -	732	10 10¾	398 15 9	– 2	6 2 –	–	1 6	54 18 –	61 – –	10 19 7	470 15 4	– 12 10 1/3
Ditto (with Corporal's chevrons)	1	11 3	– 11 3	– 2	– – 2	2 2	–	– 2 2	– 2 4	– – 5	– 14 –	– 14 –
Ditto - (ditto - ditto) -	1	11 3	– 11 3	– 2	– – 2	2 2½	–	– 2 2½	– 2 4½	– – 5	– 14 –½	– 14 –½
Ditto - (ditto - ditto) -	2	11 3	1 2 6	– 2	– – 4	2 1	–	– 4 2	– 4 6	– 1 –	1 8 –	– 14 –
Highlanders, Line:															
Staff Serjeants - - - -	1	23 10	1 3 10	– 3½	– – 3½	4 –	–	– 4 –	– 4 3½	– 1 –½	1 9 2	1 9 2
Serjeants - - - - -	187	10 2	95 1 2	– 2½	1 18 11½	2 8	–	24 18 8	26 17 7½	4 16 9¼	126 15 6¾	– 13 6⅝
Ditto - - - - -	8	9 7¾	3 17 2	– 2½	– 1 8	2 2	–	– 17 4	– 19 –	– 3 5	4 19 7	– 12 5⅜
Ditto - - - - -	11	10 2	5 11 10	– 2½	– 2 3½	2 7	–	1 8 5	1 10 8½	– 5 6¼	7 8 –¾	– 13 5½
Band - - - - -	35	9 8	16 18 4	– 2½	– 7 3½	2 2	–	3 15 10	4 3 1½	– 14 10½	21 16 4	– 12 5⅝
Privates - - - - -	3,526	5 9½	1,021 1 5	– 2	29 7 8	1 3	–	220 7 6	249 15 2	44 19 –	1,315 15 7	– 7 5 9/16
Ditto - - - - -	269	5 8¼	76 9 11¼	– 2	2 4 10	1 2	–	15 13 10	17 18 8	3 4 6	97 13 1¼	– 7 3 1/8
Ditto - - - - -	2	6 1½	– 12 3	– 2	– – 4	1 7	–	– 3 2	– 3 6	– – 7½	– 16 4½	– 8 2¼
Highlanders, Militia:															
Staff Serjeants - - - -	5	2 3 9	5 18 9	– 3½	– 1 5½	4 –	–	1 – –	1 1 5½	– 3 10¼	7 4 –¾	1 8 9¾
Serjeants - - - - -	56	1 0 2	28 9 4	– 2½	– 11 8	2 8	–	7 9 4	8 1 –	1 8 11½	37 19 3⅓	– 13 6¾
Band - - - - -	9	9 8	4 7 –	– 2½	– 1 10½	2 2	–	– 19 6	1 1 4½	– 3 10	5 12 2½	– 12 5⅝
Privates - - - - -	578	5 9½	167 7 7	– 2	4 16 4	1 3	–	36 2 6	40 18 10	7 7 4½	215 13 9½	– 7 5 0/16
West India Regiments:															
Serjeants - - - - -	24	3 1	3 14 –	– 2½	– 5 –	3 –	–	3 12 –	3 17 –	– 13 10¼	8 4 10¼	– 6 10 5/12
Drummers - - - -	15	4 1	3 1 3	– 2½	– 3 1½	3 –	–	2 5 –	2 8 1½	– 8 8	5 18 –½	– 7 10 2/5
Privates - - - - -	56	3 1	8 12 8	– 2	– 9 4	3 –	–	8 8 –	8 17 4	1 11 11½	19 1 11½	– 6 9¾
Ditto - - - - -	2	3 1	– 6 2	– 2	– – 4	2 10	–	– 5 8	– 6 –	– 1 1	– 13 3	– 6 7½
Ditto - - - - -	42	3 1	6 9 6	– 2	– 7 –	2 6	–	5 5 –	5 12 –	1 – 2	13 1 8	– 6 2¾
Enrolled Pensioners:															
Serjeants - - - - -	1	13 8½	– 13 8½	– 2½	– – 2½	2 –	–	– 2 –	– 2 2½	– – 4¾	– 16 3¾	– 16 3¾
Corporals - - - - -	3	11 7½	1 14 10½	– 2	– – 6	1 9	–	– 5 3	– 5 9	– 1 –½	2 1 8	– 13 10¾
Privates - - - - -	35	11 5½	20 1 –½	– 2	– 5 10	1 6	–	2 12 6	2 18 4	– 10 6	23 9 10½	– 13 5 1/12
Ditto - - - - -	5	11 5½	2 17 3½	– 2	– – 10	2 6	–	– 12 6	– 13 4	– 2 4½	3 13 –	– 14 7½

No. 10.—Royal Army Clothing Factory, Pimlico—Statement (B.) Garments Made up during the Year 1867–8—*continued.*

Service and Description.	Number.	Cost of Material. Rate.	Cost of Material.	Labour. Cutting. Rate.	Labour. Cutting.	Labour. Making. Rate. Hand.	Labour. Making. Rate. Machine.	Labour. Making.	Labour. Total Direct Labour.	Indirect Expenditure.	Total Expenditure.	Rate per Garment.
		s. d.	£. s. d.	s. d.	£. s. d.	s. d.	s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Jackets—*continued.*												
Military Prisons:												
Chief Warders	2	19 7	1 19 2	– 4	– – 8	6 –	–	– 12 –	– 12 8	– 2 3½	2 14 1½	1 7 –¾
Warders	8	13 6	5 8 –	– 3	– 2 –	1 9	–	– 14 –	– 16 –	– 2 10½	6 6 10½	– 15 10¼
Barrack Labourers:												
Moleskin	142	11 5	81 1 2	– 10	5 18 4	–	3 –	21 6 –	27 4 4	4 17 11¾	113 3 5¾	– 15 11⅓
Cape Mounted Rifles:												
Staff	2	21 5	2 2 10	– 3½	– – 7	6 –	–	– 12 –	– 12 7	– 2 3¼	2 17 8¼	1 8 10⅙
Serjeants	40	14 8½	29 8 4	– 2½	– 8 4	3 –	–	6 – –	6 8 4	1 3 1	36 19 9	– 18 5⅞
Trumpeters	2	13 –½	1 6 1	– 2	– – 4	2 6	–	– 5 –	– 5 4	– – 11½	1 12 4½	– 16 2¼
Privates	271	13 –½	176 14 3½	– 2	2 5 2	1 9	–	23 14 3	25 19 5	4 13 6	207 7 2½	– 15 3⅝
Ditto	194	13 –½	126 10 1	– 2	1 12 4	2 6	–	24 5 –	25 17 4	4 13 1¼	157 – 6¼	– 16 2¼
Customs:												
Pea	108	25 1¼	135 11 3	– 9½	4 5 6	6 –	–	32 8 –	36 13 6	6 12 –¼	178 16 9¼	1 13 1½
Ditto	337	25 1¼	423 – 1¼	– 9½	13 6 9½	–	4 8	78 12 8	91 19 5½	16 11 1¼	531 10 8	1 11 6½
Ditto	1	25 1¼	1 5 1¼	– 9½	– – 9½	–	5 8	– 5 8	– 6 5½	– 1 2	1 12 8¾	1 12 8¾
Boat's Crew:												
Pea	18	25 1¼	22 11 10½	– 9½	– 14 3	–	4 8	4 4 –	4 18 3	– 17 8¼	28 7 9¾	1 11 6⅕
Laboratory:												
Blue Serge	2	6 6	– 13 –	– 2	– – 4	–	2 6	– 5 –	– 5 4	– – 11½	– 19 3½	– 9 7¾
Infantry:												
Patrol Staff	1	59 –	2 19 –	– 10	– – 10	23 –	–	1 3 –	1 3 10	– 4 3½	4 7 1½	4 7 1½
Military Prisons:												
Brown Cotton	12	3 1	1 17 –	– 3	– 3 –	–	1 2	– 14 –	– 17 –	– 3 –¾	2 17 –¾	– 4 9 1/16
Netley Hospital:												
Kersey	3	8 1¼	1 4 3¾	– 3	– – 9	2 –	–	– 6 –	– 6 9	– 1 2½	1 12 3¼	– 10 9⅛

Line:															
Officers, Patrol	1	59 5	2 19 5	- 10	- - 10	23 -	-	1 3 -	1 3 10	- 4 3½	4 7 6½	4 7 6½
Officers, Undress	1	42 -	2 2 -	- 10	- - 10	18 -	-	- 18 -	- 18 10	- 3 4¾	3 4 2¾	3 4 2¾
Dragoon Guards:												
Privates	1	12 9¼	- 12 9¼	- 2	- - 2	2 9	-	- 2 9	- 2 11	- - 6¼	- 16 2½	- 16 2½
Barrack Labourers:												
Blue Serge	1	6 7	- 6 7	- 2	- - 2	1 9	-	- 1 9	- 1 11	- - 4¼	- 8 10¼	- 8 10¼
Waistcoats:												
West India Regiments:												
Serjeants	148	6 6½	48 8 2	- 2½	1 10 10	2 6	-	18 10 -	20 - 10	3 12 1¾	72 1 1¾	- 9 8⅞
Band	92	4 6½	20 17 10	- 2½	- 19 2	2 6	-	11 10 -	12 9 2	2 4 10¼	35 11 10¼	- 7 8⅞
Drummers	49	4 9¾	11 15 9¾	- 2	- 8 2	2 6	-	6 2 6	6 10 8	1 3 6¼	19 10 -	- 7 11½
Privates	2,331	4 2¼	488 1 -¾	- 2	19 8 6	2 6	-	291 7 6	310 16 -	55 18 10½	854 15 11¼	- 7 4
Ditto	425	4 2¼	88 19 8½	- 2	3 10 10	2 3	-	47 16 3	51 7 1	9 4 10½	149 11 8	- 7 -½
Undress	439	3 7¼	79 2 2¾	- 2	3 13 2	1 6	-	32 18 6	36 11 8	6 11 8½	122 5 7¼	- 5 6⅞
For Malta:												
Blue Serge	3	4 6¾	- 13 8¼	- 2	- - 6	-	2 -	- 6 -	- 6 6	- 1 2	1 1 4¼	- 7 1⅜
Military Prisons:												
Warders	7	5 9¼	2 - 4¾	- 2	- 1 2	3 6	-	1 4 6	1 5 8	- 4 7½	3 10 8¼	- 10 1¼
Barrack Labourers:												
Moleskin	142	6 2	43 15 8	- 5	2 19 2	-	2 6	17 15 -	20 14 2	3 14 6¾	68 4 4¾	- 9 7¼
Laboratory, Woolwich:												
Blue Serge	6	3 4	1 - -	- 2	- 1 -	-	1 6	- 9 -	- 10 -	- 1 9½	1 11 9½	- 5 3½
Laboratory:												
Blue Serge	2	3 4	- 6 8	- 2	- - 4	-	1 9	- 3 6	- 3 10	- - 8¼	- 11 2¼	- 5 7⅛
Army Hospital Corps:												
Moleskin	6	6 -	1 16 -	- 5	- 2 6	-	1 -	- 6 -	- 8 6	- 1 6¼	2 6 -¼	- 7 8
Netley Hospital:												
Kersey	3	4 8	- 14 -	- 2	- - 6	-	1 3	- 3 9	- 4 3	- - 9¼	- 19 -¼	- 6 4⅛
Barrack Labourers:												
Blue Serge	4	4 6¾	- 18 3	- 2	- - 8	-	2 6	- - 10	- 10 8	- 1 11	1 10 10	- 7 8½

No. 10.—Royal Army Clothing Factory, Pimlico—Statement (B.) Garments Made up during the Year 1867–8—*continued.*

Service and Description.	Number.	Cost of Material. Rate.	Cost of Material.	Labour. Cutting. Rate.	Labour. Cutting.	Labour. Making. Rate. Hand.	Labour. Making. Rate. Machine.	Labour. Making.	Labour. Total Direct Labour.	Indirect Expenditure.	Total Expenditure.	Rate per Garment.
		s. d.	£. s. d.	s. d.	£. s. d.	s. d.	s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Trousers:												
Foot Guards:												
Staff Serjeants, Cloth	16	18 4	14 13 4	– 6	– 8 –	3 6	–	2 16 –	3 4 –	– 11 6¼	18 8 10¼	1 3 –⅝
Ditto ditto	21	18 4	19 5 –	– 6	– 10 6	–	1 9	1 16 9	2 7 3	– 8 6	22 – 9	1 – 11⅞
Serjeants, Cloth	203	13 2	133 12 10	– 4	3 7 8	2 2	–	21 19 10	25 7 6	4 11 4¼	163 11 8¼	– 16 1⅓
Ditto	357	13 2	235 – 6	– 4	5 19 –	–	1 6	26 15 6	32 14 6	5 17 8¼	273 12 8¼	– 15 4
Privates, Cloth	9	10 3	4 12 3	– 3	– 2 3	1 2	–	– 10 6	– 12 9	– 2 2½	5 7 2½	– 11 11
Ditto	4,293	10 7¼	2,276 3 8¼	– 3	53 13 3	1 2	–	250 8 6	304 1 9	54 14 8¼	2,635 – 1½	– 12 3⅓
Ditto	15	10 7¼	7 19 –¾	– 3	– 3 9	–	1 –	– 15 –	– 18 9	– 3 4½	9 1 2¼	– 12 1
Ditto	1,402	10 7¼	743 7 –½	– 3	17 10 6	–	1 1	75 18 10	93 9 4	16 16 5	853 12 9½	– 12 2⅙
Black Tartan, Staff	6	12 7	3 15 6	– 6	– 3 –	3 6	–	1 1 –	1 4 –	– 4 3¾	5 3 9¾	– 17 3¾
Ditto Serjeants	141	8 10½	62 11 4½	– 3	1 15 3	–	1 1	7 12 9	9 8 –	1 13 10	73 13 2½	– 10 5⅓
Ditto Privates	632	8 10½	280 9 –	– 3	7 18 –	1 2	–	36 17 4	44 15 4	8 1 2	333 5 6	– 10 6⅚
Ditto ditto	123	8 10½	54 11 7½	– 3	1 10 9	–	1 –	6 3 –	7 13 9	1 7 8	63 13 –½	– 10 4⅕
Ditto ditto	3,699	8 10½	1,641 8 7½	– 3	46 4 9	–	1 1	200 7 3	246 12 –	44 7 9¼	1,932 8 4¾	– 10 5⅜
Ditto ditto	4	8 10½	1 15 6	– 3	– 1 –	–	1 2	– 4 8	– 5 8	– 1 –¼	2 2 2¼	– 10 6⅓
Ditto ditto	925	8 10½	410 9 4½	– 3	11 11 3	1 1	–	50 2 1	61 13 4	11 2 1¼	483 4 9¾	– 10 5⅜
Infantry:												
Staff Serjeants, Cloth	19	17 7	16 14 1	– 3½	– 5 6½	3 –	–	2 17 –	3 2 6½	– 11 3	20 7 10½	1 1 5¾
Ditto ditto	298	17 7	261 19 10	– 3½	4 6 11	–	1 9	26 1 6	30 8 5	5 9 6¼	297 17 9¼	– 19 11⅞
Ditto ditto	9	17 7	7 18 3	– 3½	– 2 7½	–	1 10	– 16 6	– 19 1½	– 3 5¼	9 – 9¾	1 – 1⅛
Serjeants, Cloth	77	12 –¼	46 5 7¼	– 2½	– 16 –½	1 5	–	5 9 1	6 5 1½	1 2 6¼	53 13 3	– 13 11¼
Ditto	203	12 –¼	122 – 2¾	– 2½	2 2 3½	–	1 3½	13 2 2½	15 4 6	2 14 11	139 19 7¾	– 13 9½
Ditto	5,546	12 –¼	3,333 7 6½	– 2½	57 15 5	–	1 1½	311 19 3	369 14 8	66 10 11¼	3,769 13 1¾	– 13 7⅛
Privates, Cloth	10	10 2¼	5 1 10½	– 2	– 1 8	1 2	–	– 11 8	– 13 4	– 2 4¾	5 17 7¼	– 11 9⅛
Ditto	7,186	10 2¼	3,660 7 4½	– 2	59 17 8	–	1 2	419 3 8	479 1 4	86 4 7¾	4,225 13 4¼	– 11 9⅛
Ditto	6,418	10 2¼	3,269 3 4½	– 2	53 9 8	–	1 –	320 18 –	374 7 8	67 7 9¼	3,710 18 9¾	– 11 6¾
Ditto	61,483	10 2¼	31,317 18 –¾	– 2	512 7 2	–	1 1	3,330 6 7	3,842 13 9	691 13 8	35,852 – 5¾	– 11 7 15/16
Black Tartan, Officers	1	15 9	– 15 9	– 4	– – 4	4 –	–	– 4 –	– 4 4	– – 9¼	1 – 10¼	1 – 10¼
Ditto Staff	90	12 6	56 5 –	– 3½	1 6 3	–	1 9	7 17 6	9 3 9	1 13 1	67 1 10	– 14 10⅞
Ditto ditto	6	12 6	3 15 –	– 3½	– 1 9	3 –	–	– 18 –	– 19 9	– 3 6¾	4 18 3¾	– 16 4½

Ditto - Serjeants - -	4,735	9	–	2,130	15	–	–	2	39	9	2	–	1	1	256	9	7	295	18	9	53	5	4½	2,479	19	1½	– 10	5⅔
Ditto - Privates - -	12	8	10½	5	6	6	–	2	–	2	–	1	2	–	–	14	–	–	16	–	–	2	10½	6	5	4½	– 10	5⅓
Ditto - ditto - - -	1,147	8	10½	508	19	7½	–	2	9	11	2	–	1	–	57	7	–	66	18	2	12	–	9⅓	587	18	7	– 10	3⅓
Ditto - ditto - - -	69,811	8	10½	30,978	12	7½	–	2	581	15	2	–	1	1	3,781	8	7	4,363	3	9	785	7	5¾	36,127	3	10¼	– 10	4⅕
Oxford Tartan, Privates - -	4,909	7	2	1,759	1	2	–	2	40	18	2	–	1	2	286	7	2	327	5	4	58	18	2	2,145	4	8	– 8	8⅞
Ditto - ditto - -	259	7	2	92	16	2	–	2	2	3	2	–	1	1	14	–	7	16	3	9	2	18	3¼	111	18	2¼	– 8	7¾
Blue Serge, Staff - - -	1	13	–	–	13	–	–	3½	–	–	3½	3	–	–	–	3	–	–	3	3½	–	–	7	–	16	10½	– 16	10½
Ditto - O.R. - - -	810	6	6½	264	18	9	–	2	6	15	–	–	1	–	40	10	–	47	5	–	8	10	1¼	320	13	10¼	– 7	11
Ditto - ditto - - -	542	6	6½	177	5	7	–	2	4	10	4	–	1	1	29	7	2	33	17	6	6	1	11½	217	5	–½	– 8	–⅕
Rifles:																												
Staff, Cloth - - - -	101	16	4½	82	13	10½	–	3½	1	9	5½	–	1	9	8	16	9	10	6	2½	1	17	1½	94	17	2½	– 18	9⅜
Serjeants, Cloth - - - -	100	11	11	59	11	8	–	2½	1	–	10	2	2	–	10	16	8	11	17	6	2	2	9	73	11	11	– 14	8⅝
Ditto - - - - -	978	11	11	582	14	6	–	2½	10	3	9	–	1	6	73	7	–	83	10	9	15	–	8¾	681	5	11¾	– 13	11⅕
Privates, Cloth - - - -	260	9	8¾	126	9	7	–	2	2	3	4	–	1	–	13	–	–	15	3	4	2	14	7¼	144	7	6¼	– 11	1¼
Ditto - - - - -	6,485	9	8¾	3,154	13	7¾	–	2	54	–	10	–	1	1	351	5	5	405	6	3	72	19	6	3,632	19	4¾	– 11	2½
Black Tartan, Staff - - -	2	11	9½	1	3	7	–	3½	–	–	7	3	–	–	–	6	–	–	6	7	–	1	1¼	1	11	3¼	– 15	7⅝
Ditto - Privates - -	242	8	4½	101	6	9	–	2	2	–	4	–	1	–	12	2	–	14	2	4	2	10	10	117	19	11	– 9	9
Ditto - ditto - - -	914	8	4½	382	14	9	–	2	7	12	4	–	1	1	49	10	2	57	2	6	10	5	5¼	450	2	8¼	– 9	10⅕
Green Tartan, Serjeants - -	84	7	2	30	2	–	–	2	–	14	–	–	1	1	4	11	–	5	5	–	–	18	10¾	36	5	10¾	– 8	7¾
Ditto - Privates - -	6,389	7	2	2,289	7	10	–	2	53	4	10	–	1	1	346	1	5	399	6	3	71	17	6¼	2,760	11	7¼	– 8	7⅝
Highlanders:																												
Staff, Plaid, Tartan - - -	6	19	1¼	5	14	7½	–	6	–	3	–	4	–	–	1	4	–	1	7	–	–	4	10¼	7	6	5¾	1	4	5
Serjeants, Plaid, Tartan - -	51	14	11¾	38	3	11¼	–	5	1	1	3	3	–	–	7	13	–	8	14	3	1	11	4½	48	9	6¾	– 19	–
Privates, Plaid, Tartan - -	647	11	3¾	365	19	2¼	–	4	10	15	8	2	6	–	80	17	6	91	13	2	16	9	11½	474	2	8¾	– 14	7¾
Enrolled Pensioners:																												
Staff, Cloth - - - -	111	18	2	100	16	6	–	3½	1	12	4½	–	1	9	9	14	3	11	6	7½	2	–	9½	114	3	11	1	–	7
Serjeants, Cloth - - - -	244	12	3¾	150	4	3	–	2½	2	10	10	–	1	3½	15	15	2	18	6	–	3	5	10½	171	16	1½	– 14	1
Ditto - - - - -	3	12	3¾	1	16	11¼	–	2½	–	–	7½	–	2	2	–	6	6	–	7	1½	–	1	3¼	2	5	4	– 15	–¾
Privates, Cloth - - - -	927	10	5½	484	14	10½	–	2	7	14	6	–	1	2	54	1	6	61	16	–	11	2	9¾	557	13	8¼	– 12	–⅜
Ditto - - - - -	1	10	5½	–	10	5½	–	2	–	–	2	–	1	1	–	1	1	–	1	3	–	–	2¾	–	11	11¼	– 11	11¼
Commissiariat Staff Corps:																												
Staff, Cloth - - - -	9	16	4½	7	7	4½	–	3½	–	2	7½	–	1	9	–	15	9	–	18	4½	–	3	–	8	8	9	– 18	9
Serjeants, Cloth - - - -	98	16	4¼	80	2	8½	–	2½	1	–	5	–	1	6	7	7	–	8	7	5	1	10	1½	90	–	3	– 18	4½
Privates, Cloth - - - -	375	13	11¾	262	2	2¼	–	2	3	2	6	–	1	2	21	17	6	25	–	–	4	10	–	291	12	2¼	– 15	6⅝
Blue Serge, Staff - - -	5	13	8¾	3	8	7¾	–	3⅓	–	1	5½	–	1	9	–	8	9	–	10	2½	–	1	10	4	–	8¼	– 16	1½
Drab, Jean - - - -	18	3	–½	2	14	9	–	2	–	3	–	–	1	2	1	1	–	1	4	–	–	4	4	4	3	1	– 4	7¼

No. 10.—Royal Army Clothing Factory, Pimlico—Statement (B.) Garments Made up during the Year 1867-8—*continued.*

Service and Description.	Number.	Cost of Material. Rate.	Cost of Material.	Labour. Cutting. Rate.	Labour. Cutting.	Labour. Making. Rate. Hand.	Labour. Making. Rate. Machine.	Labour. Making.	Labour. Total Direct Labour.	Indirect Expenditure.	Total Expenditure.	Rate per Garment.
		s. d.	£. s. d.	s. d.	£. s. d.	s. d.	s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Trousers—*continued.*												
Military Prisons:												
Drab, Jean, Chief Warders	4	3 -½	- 12 2	- 2	- - 8	-	1 9	- 7 -	- 7 8	- 1 4½	1 1 2½	- 5 3½
Cloth, Chief Warders	6	16 5¾	4 18 10½	- 2¼	- 1 3	-	1 9	- 10 6	- 11 9	- 2 1½	5 12 9	- 18 9½
Ditto, Warders	2	16 5¾	1 12 11½	- 2	- - 4	2 2	-	- 4 4	- 4 8	- - 10	1 18 5½	- 19 2¾
Ditto - ditto	77	16 5¾	63 8 10¾	- 2	- 12 10	-	1 6	5 15 6	6 8 4	1 3 1¼	71 - 4	- 18 5⅓
Drab, Jean, Warders	24	3 -½	3 13 -	- 2	- 4 -	1 2	-	1 8 -	1 12 -	- 5 9	5 10 9	- 4 7⅜
Ditto - - ditto	29	3 -½	4 8 2½	- 2	- 4 10	-	1 1	1 11 5	1 16 3	- 6 6¼	6 10 11¾	- 4 6⅕
Ditto - - ditto	90	3 -½	13 13 9	- 2	- 15 -	-	1 6	6 15 -	7 10 -	1 7 -	22 10 9	- 5 -
Army Hospital Corps:												
Staff, Cloth	1	15 7¼	- 15 7¼	- 3½	- - 3½	-	1 9	- 1 9	- 2 -½	- - 4½	- 18 -	- 18 -
Serjeants, ditto	178	15 6½	138 6 5	- 2½	1 17 1	-	1 6	13 7 -	15 4 1	2 14 9	156 5 3	- 17 6⅝
Privates, ditto	6	13 -¼	3 18 1½	- 2	- 1 -	1 2	-	- 7 -	- 8 -	- 1 5	4 7 6½	- 14 7
Ditto - ditto	707	13 -¼	460 5 8¾	- 2	5 17 10	-	1 -	35 7 -	41 4 10	7 8 5¾	508 19 -½	- 14 4¾
Staff, Blue Serge	5	13 3½	3 6 5½	- 3½	- 1 5½	-	1 6	- 7 6	- 8 11½	- 1 7¼	3 17 -¼	- 15 4¾
Military Store Clerks:												
2nd Class	6	14 9½	4 8 9	- 2½	- 1 3	-	1 6	- 9 -	- 10 3	- 1 10¼	5 - 10¼	- 16 9⅞
Librarians:												
Garrison	1	12 -¼	- 12 -¼	- 2½	- - 2½	-	1 3½	- 1 3½	- 1 6	- - 3¼	- 13 9½	- 13 9½
Fire Brigade:												
Serjeants	1	9 7¾	- 9 7¾	- 2	- - 2	-	1 -	- 1 -	- 1 2	- - 2½	- 11 -¼	- 11 -¼
Privates	10	9 7¾	4 16 5½	- 2	- 1 8	-	1 -	- 10 -	- 11 8	- 2 1½	5 10 3	- 11 -¼
Barrack Labourers:												
Moleskin	142	8 2	57 19 8	- 2	1 3 8	-	1 2	8 5 8	9 9 4	1 14 1	69 3 1	- 9 8⅞
Serge	2	6 2¾	- 12 5½	- 2	- - 4	-	1 1	- 2 2	- 2 6	- - 5¼	- 15 4¾	- 7 8⅜
Military Labourers:												
Duck, White	220	3 -	33 - -	- 2	1 16 8	-	1 1	11 18 4	13 15 -	2 9 6	49 4 6	- 4 5¾
Magazines:												
Duck, White	1,006	2 8½	136 4 7	- 2	8 7 8	-	1 1	54 9 10	62 17 6	11 6 4½	210 8 5¼	- 4 2½

Royal Laboratory:														
Duck, White	249	3 –	37 7 –	– 2	2 1 6	–	1 1	13 9 9	15 11 3	2 16 –¼	55 14 3¼	– 4 5⅝
Cavalry:														
Duck, White	763	3 3	123 19 9	– 2	6 7 2	–	1 –	38 3 –	44 10 2	8 – 2¾	176 10 1¾	– 4 7½
Ditto	183	3 3	29 14 9	– 2	1 10 6	–	1 1	9 18 3	11 8 9	2 1 2¼	43 4 8¼	– 4 8¾
Infantry:														
Duck, White	12	3 –	1 16 –	– 2	– 2 –	–	1 1	– 13 –	– 15 –	– 2 8¼	2 13 8¼	– 4 5⅝
Gymnasium:														
Blue Serge	29	6 –	8 14 –	– 2	– 4 10	1 2	–	1 13 10	1 18 8	– 6 11¾	10 19 7¾	– 7 6 25/29
Ditto	14	6 –	4 4 –	– 2	– 2 4	–	1 –	– 14 –	– 16 4	– 2 11¼	5 3 3¼	– 7 4½
Ditto	133	6 –	39 18 –	– 2	1 2 2	–	1 1	7 4 1	8 6 3	1 9 10¾	49 14 1¾	– 7 5¾
Boat's Crew:														
Cloth	5	12 10	3 4 2	– 2	– – 10	1 2	–	– 5 10	– 6 8	– 1 2½	3 12 –½	– 14 4⅞
Ditto	9	12 10	5 15 6	– 2	– 1 6	–	1 –	– 9 –	– 10 6	– 1 10¾	6 7 10¾	– 14 2½
Ditto	9	12 10	5 15 6	– 2	– 1 6	–	1 1	– 9 9	– 11 3	– 2 –¼	6 8 9¼	– 14 3⅝
Serge	9	5 4½	2 8 4½	– 2	– 1 6	–	1 –	– 9 –	– 10 6	– 1 10¾	3 – 9¼	– 6 9
Ditto	9	5 4½	2 8 4½	– 2	– 1 6	–	1 1	– 9 9	– 11 3	– 2 –¼	3 1 7¾	– 6 10¼
Patterns (Col. H.):														
Black Tartan	1	8 6	– 8 6	– 2	– – 2	1 2	–	– 1 2	– 1 4	– – 3	– 10 1	– 10 1
Blue Serge	2	6 7	– 13 2	– 2	– – 4	1 2	–	– 2 4	– 2 8	– – 5¾	– 16 3¾	– 8 1⅞
Boiler Cleaners:														
Canvas	2	2 8	– 5 4	– 2	– – 4	–	1 –	– 2 –	– 2 4	– – 5	– 8 1	– 4 –½
Military Train:														
Drab Jean	4	3 –½	– 12 2	– 2	– – 8	–	1 9	– 7 –	– 7 8	– 1 4½	1 1 2½	– 5 3⅝
Patterns:														
Privates, Cloth	1	10 6	– 10 6	– 2	– – 2	–	1 2	– 1 2	– 1 4	– – 3	– 12 1	– 12 1
Ditto - Black Tartan	1	8 6	– 8 6	– 2	– – 2	–	1 7	– 1 7	– 1 9	– – 3½	– 10 6½	– 10 6½
Army Hospital Corps:														
Moleskin	9	8 2	3 13 6	– 2	– 1 6	–	1 2	– 10 6	– 12 –	– 2 2	4 7 8	– 9 9
School of Gunnery:														
Duck	86	2 8½	11 12 11	– 2	– 14 4	–	1 1	4 13 2	5 7 6	– 19 4½	17 19 9¼	– 4 2⅕

No. 10.—Royal Army Clothing Factory, Pimlico.—Statement (B.) Garments Made up during the Year 1867–8—*continued.*

Service and Description.	Number.	Cost of Material. Rate.	Cost of Material.	Labour. Cutting. Rate.	Labour. Cutting.	Labour. Making. Rate. Hand.	Labour. Making. Rate. Machine.	Labour. Making.	Labour. Total Direct Labour.	Indirect Expenditure.	Total Expenditure.	Rate per Garment.
		s. d.	£. s. d.	s. d.	£. s. d.	s. d.	s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Trowsers:												
Infantry:												
Drill, White	10	2 7¼	1 6 -½	– 2	– 1 8	1 2	–	– 11 8	– 13 4	– 2 4¾	2 1 9¼	– 4 2⅛
Ditto	2,124	2 7¼	276 11 3	– 2	17 14 –	1 1	–	115 1 –	132 15 –	23 17 10¾	433 4 1¾	– 4 -31/32
Ditto	36	2 7¼	4 13 9	– 2	– 6 –	–	1 1	1 19 –	2 5 –	– 8 1¼	7 6 10¼	– 4 -17/18
Ditto	1,320	2 7¼	171 17 6	– 2	11 – –	–	– 9	49 10 –	60 10 –	10 17 9½	243 5 3½	– 3 8¼
Ditto	736	2 7¼	95 16 8	– 2	6 2 8	–	– 10	30 13 4	36 16 –	6 12 5¾	139 5 1¾	– 3 9 3/7
Overalls:												
Cape Mounted Rifles:												
Staff	4	23 4¾	4 13 7	– 6	– 2 –	–	3 –	– 12 –	– 14 –	– 2 6¼	5 10 1¼	1 7 6¼
Other Ranks	5	20 5	5 2 1	– 5	– 2 1	3 6	–	– 17 6	– 19 7	– 3 6½	6 5 2½	1 5 -½
Ditto	910	20 5	928 19 2	– 5	18 19 2	–	2 5	109 19 2	128 18 4	23 4 1½	1,081 1 7½	1 3 9⅛
Officers	2	25 –	2 10 –	– 6	– 1 –	–	3 –	– 6 –	– 7 –	– 1 2½	2 18 2½	1 9 1¼
Cavalry:												
Staff, Annual	2	20 10	2 1 8	– 6	– 1 –	7 –	–	– 14 –	– 15 –	– 2 8¼	2 19 4¼	1 9 8⅛
Other Ranks, Annual	17	20 1	17 1 5	– 5	– 7 1	6 –	–	5 2 –	5 9 1	– 19 7½	23 10 1½	1 7 8 14/17
Ditto - ditto	2	20 1	2 – 2	– 5	– – 10	2 9	–	– 5 6	– 6 4	– 1 1¾	2 7 7¾	1 3 9⅞
Ditto - ditto	4	20 1	4 – 4	– 5	– 1 8	4 –	–	– 16 –	– 17 8	– 3 2	5 1 2	1 5 3½
Staff, Biennial	1	17 1	– 17 1	– 4	– – 4	4 –	–	– 4 –	– 4 4	– – 9½	1 2 2½	1 2 2½
Other Ranks, Biennial	4	16 4	3 5 4	– 3	– 1 –	2 9	–	– 11 –	– 12 –	– 2 1¾	3 19 5¾	– 19 10½
Breeches:												
Zouave Regiments:												
Blue Serge, Other Ranks	2,961	7 5¼	1,101 2 5¼	– 2	24 13 6	–	1 9	259 1 9	283 15 3	51 1 6½	1,435 19 2¾	– 9 8⅕
Dungaree	1,728	3 11½	342 – –	– 2	14 8 –	–	1 9	151 4 –	165 12 –	29 16 2¼	537 8 2¼	– 6 2⅗
Frocks:												
Infantry:												
White Drill, Privates	2,051	3 3	333 5 9	– 2½	21 7 3½	1 6	–	153 16 6	175 3 9½	31 10 8¼	540 – 2¾	– 5 3 2/11
Ditto - ditto	72	3 3	11 14 –	– 2½	– 15 –	1 3	–	4 10 –	5 5 –	– 18 10¾	17 17 10¾	– 4 11 23/30
Ditto - ditto	2,009	3 3	326 9 3	– 2½	20 18 6½	–	1 3	125 11 3	146 9 9½	26 7 4½	499 6 5	– 4 11 9/30
Ditto - ditto	82	3 3	13 6 6	– 2½	– 17 1	–	1 –	4 2 –	4 19 1	– 17 10¼	19 3 5¼	– 4 8⅕

Duck, Staff	8	6	9	2	14	–	–	3	–	2	–	2	3	–	–	18	–	1	–	–	–	3	7	3	17	7	–	9	8⅜
Ditto	6	6	9	2	–	6	–	3	–	1	6	–		2	–	–	12	–	–	13	6	–	2	5½	2	16	5½	–	9	5
Ditto	4	6	9	1	7	–	–	3	–	1	–	–		1	10½	–	7	6	–	8	6	–	1	5¼	1	16	11¼	–	9	2¾
Ditto	16	3	9½	3	–	8	–	3	–	4	–	–		1	9	1	8	–	1	12	–	–	5	9½	4	18	5½	–	6	1⅞
Ditto	7	3	9½	1	6	6½	–	3	–	1	9	–		1	8	–	11	8	–	13	5	–	2	4¾	2	2	4¼	–	6	–⅝
Duck, Serjeants	143	3	7	25	12	5	–	2½	1	9	9½	–		1	9	12	10	3	14	–	–½	2	10	4¾	42	2	10¼	–	5	10¾
Ditto	112	3	7	20	1	6	–	2½	1	3	4	–		1	8	9	6	8	10	10	–	1	17	9¾	32	9	1¾	–	5	9½
Duck, Privates	954	3	6	166	19	–	–	2½	9	18	9	2	–		–	95	8	–	105	6	9	18	19	2½	291	4	11½	–	6	1¼
Ditto	9,131	3	6	1,597	18	4	–	2½	95	2	3½	–		1	6	684	16	6	779	18	9½	140	7	9¼	2,518	5	–¾	–	5	6 2/11
Ditto	360	3	6	63	–	–	–	2½	3	15	–	–		1	7	28	10	–	32	5	–	5	16	1	101	1	1	–	5	7⅜
Ditto	1,041	3	6	182	3	6	–	2½	10	16	10½	–		1	8	86	15	–	97	11	10½	17	11	4¼	297	6	8¾	–	5	8⅝
Red Serge, Staff	7	12	5¼	4	7	–¾	–	4½	–	2	7½	5	–		–	1	15	–	1	17	7½	–	6	9¼	6	11	5½	–	18	9¾
Ditto	6	12	5¼	3	14	7½	–	4½	–	2	3	–		2	4	–	14	–	–	16	3	–	2	11¼	4	13	9¾	–	15	7¾
Ditto	6	12	5¼	3	14	7½	–	4½	–	2	3	–		2	5	–	14	6	–	16	9	–	3	–	4	14	4½	–	15	8¾
Red Serge, Serjeants	1	7	6	–	7	6	–	2½	–	–	2½	–		2	1	–	2	1	–	2	3½	–	–	5	–	10	2½	–	10	2½
Ditto - ditto	1	7	6	–	7	6	–	2½	–	–	2½	–		2	7	–	2	7	–	2	9½	–	–	6	–	10	9½	–	10	9½
Ditto - ditto	4	7	6	1	10	–	–	2½	–	–	10	2	4		–	–	9	4	–	10	2	–	1	10	2	2	–	–	10	6
Ditto - ditto	8	7	6	3	–	–	–	2½	–	1	8	–		2	6	1	–	–	1	1	8	–	3	10¾	4	5	6¾	–	10	8¼
Ditto - ditto	15	7	6	5	12	6	–	2½	–	3	1½	–		2	4	1	15	–	1	18	1½	–	6	10½	7	17	6	–	10	6
Ditto - ditto	54	7	6	20	5	–	–	2½	–	11	3	–		2	–	5	8	–	5	19	3	1	1	5½	27	5	8½	–	10	1¼
Ditto - ditto	3	7	6	1	2	6	–	2½	–	–	7½	–		2	5	–	7	3	–	7	10½	–	1	5	1	11	9½	–	10	7½
Ditto - ditto	221	7	6	82	17	6	–	2½	2	6	–½	2	–		–	22	2	–	24	8	–½	4	7	10¼	111	13	4¾	–	10	1½
Red Serge, Privates	1	7	2	–	7	2	–	2½	–	–	2½	1	6		–	–	1	6	–	1	8½	–	–	3½	–	9	2	–	9	2
Ditto - ditto	347	7	2	124	6	10	–	2½	3	12	3½	2	3		–	39	–	9	42	13	–½	7	13	6¾	174	13	5¼	–	10	–⅞
Ditto - ditto	575	7	2	206	–	10	–	2½	5	19	9½	–		1	9	50	6	3	56	6	–½	10	2	8¼	272	9	6¾	–	9	5¾
Ditto - ditto	8	7	2	2	17	4	–	2½	–	1	8	1	8		–	–	13	4	–	15	–	–	2	8¼	3	15	–¼	–	9	4½
Ditto - ditto	9,664	7	2	3,462	18	8	–	2½	100	13	4	–		1	8	805	6	8	906	–	–	163	1	7¼	4,532	–	3¼	–	9	4⅝
Ditto - ditto	2,253	7	2	807	6	6	–	2½	23	9	4½	–		1	7	178	7	3	201	16	7½	36	6	7¾	1,045	9	9¼	–	9	3⅜
Ditto - ditto	6	7	2	2	3	–	–	2½	–	1	3	–		1	11	–	11	6	–	12	9	–	2	3¾	2	18	–¾	–	9	8⅛
Ditto - ditto	565	7	2	202	9	2	–	2½	5	17	8½	–		2	–	56	10	–	62	7	8½	11	4	7	276	1	5½	–	9	9¼
Military Store Clerks:																														
Blue Serge	1	7	8	–	7	8	–	2½	–	–	2½	2	6		–	–	2	6	–	2	8½	–	–	5½	–	10	10	–	10	10
Rifles:																														
Green Serge, Staff (without Chevrons or Badges).	6	8	9½	2	12	9	–	4½	–	2	3	–		2	2	–	13	–	–	15	3	–	2	8¾	3	10	8¾	–	11	9½
Green Serge, Serjeants	16	7	7	6	1	4	–	2½	–	3	4	2	6		–	2	–	–	2	3	4	–	7	9½	8	12	5½	–	10	9⅜
Ditto - - ditto	1	7	7	–	7	7	–	2½	–	–	2½	–		2	2	–	2	2	–	2	4½	–	–	5¼	–	10	4¾	–	10	4¾
Ditto - - ditto	50	7	7	18	19	2	–	2½	–	10	5	2	4		–	5	16	8	6	7	1	1	2	10½	26	9	1½	–	10	7
Ditto - - ditto	33	7	7	12	10	3	–	2½	–	6	10½	–		2	4	3	17	–	4	3	10½	–	15	1¼	17	9	2¾	–	10	7
Ditto - - ditto	27	7	7	10	4	9	–	2½	–	5	7½	–		1	9	2	7	3	2	12	10½	–	9	6¼	13	7	1¾	–	9	10 20/27
Ditto - Band	18	7	1½	6	8	3	–	2½	–	3	9	–		1	8	1	10	–	1	13	9	–	6	–¾	8	8	–¾	–	9	4
Ditto - Buglers	26	7	1½	9	5	3	–	2½	–	5	5	–		1	8	2	3	4	2	8	9	–	8	9¼	12	2	9¼	–	9	4

No. 10.—Royal Army Clothing Factory, Pimlico—Statement (B.) Garments Made up during the Year 1867-8—*continued.*

Service and Description.	Number.	Cost of Material. Rate.	Cost of Material.	Labour. Cutting. Rate.	Labour. Cutting.	Labour. Making. Rate. Hand.	Labour. Making. Rate. Machine.	Labour. Making.	Total Direct Labour.	Indirect Expenditure.	Total Expenditure.	Rate per Garment.
		s. d.	£. s. d.	s. d.	£. s. d.	s. d.	s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Frocks—*continued.*												
Rifles—*continued.*												
Privates, Green serge	285	7 1½	101 10 7½	– 2½	2 19 4½	2 –	–	28 10 –	31 9 4½	5 13 3¼	138 13 3¼	– 9 8⅞
Ditto - ditto	383	7 1½	136 8 10½	– 2½	3 19 9½	–	1 6	28 14 6	32 14 3½	5 17 9¾	175 – 11¾	– 9 1¾
Ditto - ditto	934	7 1½	332 14 9	– 2½	9 14 7	–	1 7	73 18 10	83 13 5	15 1 2¾	431 9 4¾	– 9 2⅞
Ditto - ditto	500	7 1½	178 2 6	– 2½	5 4 2	–	1 9	43 15 –	48 19 2	8 16 3	235 17 11	– 9 5¼
Ditto - ditto	597	7 1½	212 13 7½	– 2½	6 4 4½	–	1 8	49 15 –	55 19 4½	10 1 5¾	278 14 5¾	– 9 4 1/20
Hospital Ship (Mauritius):												
Serjeants, Blue Serge	2	7 11	– 15 10	– 2½	– – 5	1 9	–	– 3 6	– 3 11	– – 8½	1 – 5½	– 10 2¾
Other Ranks, ditto	28	7 8	10 14 8	– 2½	– 5 10	1 9	–	2 9 –	2 14 10	– 9 10½	13 19 4½	– 9 11 5/7
Commissariat Staff Corps:												
Drab Jean	18	4 10	4 7 –	– 2	– 3 –	2 –	–	1 16 –	1 19 –	– 7 –¼	6 13 –¼	– 7 4¾
Military Prisons:												
Chief Warders, Drab Jean	4	4 5¾	– 17 11	– 2½	– – 10	6 –	–	1 4 –	1 4 10	– 4 5½	2 7 2½	– 11 9¾
Warders, Drab Jean	63	5 3	16 10 9	– 2	– 10 6	2 9	–	8 13 3	9 3 9	1 13 1	27 7 7	– 8 8⅓
Ditto - ditto (without embroidery)	72	5 3	18 18 –	– 2	– 12 –	–	2 –	7 4 –	7 16 –	1 8 1	28 2 1	– 7 9⅝
Blue Serge, Staff	2	9 5	– 18 10	– 4	– – 8	6 –	–	– 12 –	– 12 8	– 2 3¼	1 13 9½	– 16 10⅝
Army Hospital Corps:												
Staff, Blue Serge	3	15 6¼	2 6 6¾	– 4	– 1 –	–	2 1	– 6 3	– 7 3	– 1 2½	2 15 –¼	– 18 4⅛
Ditto	1	15 6¼	– 15 6¼	– 4	– – 4	–	1 11	– 1 11	– 2 3	– – 4¾	– 18 2	– 18 2
Privates, Blue Serge	143	7 10¼	56 3 1¾	– 2½	1 9 9½	1 7	–	11 6 5	12 16 2½	2 6 2¼	71 5 6½	– 9 11⅝
Ditto - ditto	91	7 10¼	35 14 8¾	– 2½	– 18 11½	–	1 7	7 4 1	8 3 –½	1 9 4¼	45 7 1½	– 9 11⅝
Ditto - ditto	4	7 10¼	1 11 5	– 2½	– – 10	–	1 8	– 6 8	– 7 6	– 1 4	2 – 3	– 10 –¾
Barrack Labourers:												
Blue Serge	1	7 6¼	– 7 6¼	– 2½	– – 2½	–	1 8	– 1 8	– 1 10½	– – 4½	– 9 9	– 9 9
Military Labourers:												
Duck, White	270	2 10¾	39 1 10½	– 2	2 5 –	–	1 8	22 10 –	24 15 –	4 9 1	68 5 11½	– 5 –¾

Frocks:												
Blue Serge	18	7 6½	6 15 9	– 2½	– 3 9	–	1 8	1 10 –	1 13 9	– 6 1	8 15 7	– 9 9 1/18
Magazines:												
Duck, White	1,185	2 6¾	151 16 6¾	– 2	9 17 6	–	1 8	98 15 –	108 12 6	19 11 –½	280 – 1¼	– 4 8¾
Gymnasium:												
Red Serge	64	6 1¼	19 10 8	– 2	– 10 8	2 –	–	6 8 –	6 18 8	1 4 11½	27 14 3½	– 8 7 15/16
Ditto	111	6 1¼	33 17 6¾	– 2	– 18 6	–	1 8	9 5 –	10 3 6	1 16 7½	45 17 8¼	– 8 3⅕
Royal Laboratory:												
Duck, White	169	2 7	21 16 7	– 2	1 8 2	–	1 8	14 1 8	15 9 10	2 15 9	40 2 2	– 4 8 15/16
Boats' Crew:												
Red Serge	18	8 3	7 8 6	– 2	– 3 –	2 –	–	1 16 –	1 19 –	– 7 –¼	9 14 6¼	– 10 9⅔
Boiler Cleaners:												
Canvas	2	2 4	– 4 8	– 2	– – 4	–	1 8	– 3 4	– 3 8	– – 8	– 9 –	– 4 6
Military Train:												
Drab Jean	4	4 10	– 19 4	– 2	– – 8	–	1 8	– 6 8	– 7 4	– 1 3¾	1 7 11¾	– 7 –
School of Gunnery:												
Duck, White	40	3 –¼	6 – 10	– 2	– 6 8	–	1 8	3 6 8	3 13 4	– 13 2½	10 7 4½	– 5 2¼
Royal Laboratory:												
Red Serge	2	7 –	– 14 –	– 2	– – 4	–	1 9	– 3 6	– 3 10	– – 8½	– 18 6½	– 9 3¼
Blue Serge	6	7 6	2 5 –	– 2	– 1 –	–	1 8	– 10 –	– 11 –	– 1 11¾	2 17 11¾	– 9 8
Great Coats:												
Infantry:												
Officers	1	37 –	1 17 –	1 –	– 1 –	14 –	–	– 14 –	– 15 –	– 2 8½	2 14 8½	2 14 8½
Staff	20	35 1	35 1 8	– 9	– 15 –	–	4 –	4 – –	4 15 –	– 17 1¼	40 13 9¼	2 – 8¼
Ditto	211	35 1	370 2 7	– 9	7 18 3	–	3 6	36 18 6	44 16 9	8 1 4½	423 – 8½	2 – 1
Privates	18,004	24 11½	22,467 9 10	– 3½	262 11 2	–	2 4	2,100 9 4	2,363 – 6	425 6 10¾	25,255 17 2¾	1 8 –11/16
Rifles:												
Privates	1,278	24 11½	1,594 16 9	– 3½	18 12 9	–	2 4	149 2 –	167 14 9	30 3 10¼	1,792 15 4¼	1 8 –⅔

No. 10.—Royal Army Clothing Factory, Pimlico—Statement (B.) Garments Made up during the Year 1867–8—*continued.*

Service and Description.	Number.	Cost of Material. Rate.	Cost of Material.	Labour. Cutting. Rate.	Labour. Cutting.	Labour. Making. Rate. Hand.	Labour. Making. Rate. Machine.	Labour. Making.	Total Direct Labour.	Indirect Expenditure.	Total Expenditure.	Rate per Garment.
		s. d.	£. s. d.	s. d.	£. s. d.	s. d.	s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Great Coats—*continued.*												
Commissariat Staff Corps:												
Staff Serjeants	4	36 6¼	7 6 1	– 9	– 3 –	–	3 6	– 14 –	– 17 –	– 3 –¾	8 6 1¾	2 1 6½
Ditto	7	36 6¼	12 15 7¾	– 9	– 5 3	–	4 –	1 8 –	1 13 3	– 5 11¾	14 14 10½	2 2 1⅓
Privates	176	35 11½	316 8 8	– 3½	2 11 4	–	2 4	20 10 8	23 2 –	4 3 2	343 13 10	1 19 –⅝
Ditto	34	35 11½	61 2 7	– 3½	– 9 11	–	2 8	4 10 8	5 – 7	– 18 1¼	67 1 3¼	1 19 5 5/17
Enrolled Pensioners:												
Privates	3	24 11½	3 14 10½	– 3½	– – 10½	–	2 8	– 8 –	– 8 10½	– 1 7¼	4 5 4¼	1 8 5½
Ditto	2	24 11½	2 9 11	– 3½	– – 7	–	3 –	– 6 –	– 6 7	– 1 2¼	2 17 8¼	1 8 10⅛
Military Prisons:												
Chief Warders	3	33 7¼	5 – 9¾	– 9	– 2 3	8 6	–	1 5 6	1 7 9	– 5 –	6 13 6¾	2 4 6¼
Warders	45	29 11	67 6 3	– 6	1 2 6	–	7 –	15 15 –	16 17 6	3 – 9	87 4 6	1 18 9 1/5
Ditto	21	42 –½	44 2 10½	– 6	– 10 6	–	9 –	9 9 –	9 19 6	1 15 10½	55 18 3	2 13 3
Ditto	5	29 11	7 9 7	– 6	– 2 6	–	7 6	1 17 6	2 – –	– 7 2½	9 16 9½	1 19 4¼
Barrack Serjeants (without chevrons)	26	35 8¾	46 8 11½	– 3½	– 7 7	–	3 6	4 11 –	4 18 7	– 17 9½	52 5 4	2 – 2½
Librarians	1	24 11½	1 4 11½	– 3½	– – 3½	–	3 6	– 3 6	– 3 9½	– – 8½	1 9 5½	1 9 5½
Schoolmasters (with chevrons and Crowns).	8	35 1	14 – 8	– 9	– 6 –	–	3 6	1 8 –	1 14 –	– 6 1¼	16 – 9¼	2 – 1⅛
Customs	925	31 4¾	1,452 1 1¾	1 –½	48 3 6½	–	6 –	277 10 –	325 13 6½	58 12 5¼	1,836 7 1½	1 19 8 17/37
Volunteers:												
Staff Serjeants	1	35 1	1 15 1	– 9	– – 9	6 –	–	– 6 –	– 6 9	– 1 2½	2 3 –½	2 3 –½
Ditto	1	35 1	1 15 1	– 9	– – 9	–	4 3	– 4 3	– 5 –	– – 10¾	2 – 11¾	2 – 11¾
Hussars:												
Serjeants as Staff Infantry	1	35 1	1 15 1	– 9	– – 9	3 6	–	– 3 6	– 4 3	– – 9¼	2 – 1¼	2 – 1¼
Officers	1	54 2	2 14 2	1 –	– 1 –	29 6	–	1 9 6	1 10 6	– 5 5¾	4 10 1¾	4 10 1¾
Ditto	1	86 1	4 6 1	1 –	– 1 –	27 –	–	1 7 –	1 8 –	– 5 –½	5 19 1½	5 19 1½
Army Hospital Corps:												
Staff Serjeants	2	36 6¼	3 13 –½	– 9	– 1 6	–	3 6	– 7 –	– 8 6	– 1 6¼	4 3 –¾	2 1 6⅜
Provost Serjeants	2	36 1¼	3 12 2½	– 3½	– – 7	–	3 6	– 7 –	– 7 7	– 1 4¼	4 1 1¾	2 – 6⅞

Cloaks:																								
Watch	1,006	35	8½	1,796	2	7	–	5	20	19	2		–	2	4	117	7	4	138	6	6	24	17	11¾	1,959	7	–¾	1	18	11⅓
Schoolmasters	30	33	3	49	17	6	–	9	1	2	6		–	2	9	4	2	6	5	5	–	–	18	10¾	56	1	4¾	1	17	4½
Ditto	2	33	3	3	6	6	–	9	–	1	6		–	3	10	–	7	8	–	9	2	–	1	7¾	3	17	3¾	1	18	8
Boat	14	33	–	23	2	–	–	6	–	7	–		–	2	3	1	11	6	1	18	6	–	6	11¼	25	7	5¼	1	16	3
Cavalry	500	38	8	966	13	4	–	10	20	16	8	2	6		–	62	10	–	83	6	8	15	–	–	1,065	–	–	2	2	7⅕
Ditto	900	38	8	1,740	–	–	–	10	37	10	–		–	2	7	116	5	–	153	15	–	27	13	6	1,921	8	6	2	2	8⅜
Ditto	37	39	3½	72	13	9½	–	10	1	10	10		–	2	11	5	7	11	6	18	9	1	4	11¾	80	17	6¼	2	3	8½
Ditto	10	38	8	19	6	8	–	10	–	8	4		–	2	5	1	4	2	1	12	6	–	5	10½	21	5	–½	2	2	6 1/16
Cloak, Officers	1	89	4	4	9	4	1	–	–	1	–	15	–		–	–	15	–	–	16	–	–	2	10½	5	8	2½	5	8	2½
Pattern	1	39	–	1	19	–	–	10	–	–	10	4	–		–	–	4	–	–	4	10	–	–	10½	2	4	8½	2	4	8½
Capes:																														
Cavalry	500	17	4	433	6	8	–	1	2	1	8	–	6		–	12	10	–	14	11	8	2	12	6	450	10	10	–	18	–¼
Ditto	644	17	4	558	2	8	–	1	2	13	8		–	–	9	24	3	–	26	16	8	4	16	7¼	589	15	11¼	–	18	3¾
Ditto	1,506	17	4	1,305	4	–	–	1	6	5	6		–	–	7	43	18	6	50	4	–	9	–	8½	1,364	8	8½	–	18	1 4/5
Pattern	1	17	2	–	17	2	–	1	–	–	1	1	–		–	–	1	–	–	1	1	–	–	2¼	–	18	5¼	–	18	5¼
Sundries:																														
Covers, Hackle	53	–	1	–	4	5	–	–⅛	–	–	6½	–	1		–	–	4	5	–	4	11½	–	–	10¾	–	10	3¼	–	–	2¼
Knots, Gold, pairs	1	1	9	–	1	9		–			–	–	3		–	–	–	3	–	–	3	–	–	–½	–	2	–½	–	2	–½
Wings, Band, Line	9	1	6	–	13	6	–	–⅛	–	–	1¼	–	6		–	–	4	6	–	4	7¼	–	–	10	–	18	11¼	–	2	1¼
Facings, Tunic	6	1	9	–	10	6	–	–⅛	–	–	–¾	–	6		–	–	3	–	–	3	–¾	–	–	6½	–	14	1¼	–	2	4¼
Ditto ditto	9	1	9	–	15	9	–	–⅛	–	–	1¼	–	9		–	–	6	9	–	6	10¼	–	1	2½	1	3	9¾	–	2	7¾
Drawers, Flannel	450	3	–	67	10	–	–	1	1	17	6	–	6		–	11	5	–	13	2	6	2	7	3	82	19	9	–	3	8¼
Drum Carriage, Bass	3	20	6	3	1	6	–	–¼	–	–	–¾	5	6		–	–	16	6	–	16	6¾	–	2	11¾	4	–	1½	1	7	–⅛
Ditto - - Side	1	15	3	–	15	3	–	–¼	–	–	–¼	3	–		–	–	3	–	–	3	–¼	–	–	6½	–	18	9¾	–	18	9¾
Ditto - - Side	4	15	3	3	1	–	–	–¼	–	–	1	3	6		–	–	14	–	–	14	1	–	2	6½	3	17	7½	–	19	4¾
Instrument Slings	30	7	–½	10	11	3	–	–⅛	–	–	3¾	1	2		–	1	15	–	1	15	3¾	–	6	4¼	12	12	11	–	8	5 1/6
Facings, Highland, sets	122	1	10	11	3	8	–	–⅛	–	1	3¼	–	9		–	4	11	6	4	12	9¼	–	16	8	16	13	1¼	–	2	8¾
Covers, Mess Tin, White Duck	2,017	–	2¾	23	2	2¾	–	–⅛	1	1	–¼	–	3		–	25	4	3	26	5	3¼	4	14	6½	54	2	–½	–	–	6 4/9
Ditto - ditto - Black Duck	1,786	–	3	22	6	6	–	–⅛	–	18	7¼	–	2		–	14	17	8	15	16	3½	2	16	11¼	40	19	8½	–	–	5½
Plaids, Serjeants, Highlanders	2	5	3	–	10	6	–	–½	–	–	1	–	6		–	–	1	–	–	1	1	–	–	2¼	–	11	9¼	–	5	10 5/8
Ditto, Privates - ditto	40	4	–	8	–	–	–	–½	–	1	8	–	6		–	1	–	–	1	1	8	–	3	10¾	9	5	6¾	–	4	7 5/8
Straps, Shoulder, Staff	17	1	7	1	6	11	–	–½	–	–	8½	–	6		–	–	8	6	–	9	2½	–	1	8	1	17	9½	–	2	2¼
Ditto - - Serjeants	85	–	4½	1	11	10½	–	–½	–	3	6½	–	6		–	2	2	6	2	6	–½	–	8	3½	4	6	2½	–	1	–⅙
Ditto - - - ditto	337	–	4½	6	6	4½	–	–½	–	14	–½	–	3		–	4	4	3	4	18	3½	–	17	8¼	12	2	4¼	–	–	8 8/9
Ditto - - Privates	1,680	–	4	28	–	–	–	–½	3	10	–	–	3		–	21	–	–	24	10	–	4	6	8½	56	16	8½	–	–	8⅛
Ditto - - - ditto	4,648	–	4½	87	3	–	–	–½	9	13	8	–	3		–	58	2	–	67	15	8	12	4	–¼	167	2	8¼	–	–	8 1/20
Ditto - - - ditto	1	–	4½	–	–	4½	–	–½	–	–	–½	–	1½		–	–	–	1½	–	–	2	–	–	–¼	–	–	6¾	–	–	6¾
							Per Dozen.																							
Towels	4,869	–	8½	172	8	10½	–	1	1	13	9¾	–	–¾		–	15	4	3¾	16	18	1½	3	–	10¼	192	7	10¼	–	–	9½
												Per Dozen.																		
Ditto	168	–	8½	5	19	–	–	1	–	1	2	–	4		–	–	4	8	–	5	10	–	1	–½	6	5	10½	–	–	9
Ditto	83,958	–	8½	2,973	10	3	–	1	29	3	–½	–	5		–	145	15	2½	174	18	3	31	9	8¼	3,179	18	2¼	–	–	9 1/11

No. 10.—Royal Army Clothing Factory, Pimlico—Statement (B.) Garments Made up during the Year 1867–8—*continued.*

Service and Description.	Number.	Cost of Material. Rate.	Cost of Material.	Labour. Cutting. Rate.	Labour. Cutting.	Labour. Making. Rate. Hand.	Labour. Making. Rate. Machine.	Labour. Making.	Total Direct Labour.	Indirect Expenditure.	Total Expenditure.	Rate per Garment.
		s. d.	£. s. d.	s. d.	£. s. d.	s. d.	s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Sundries—*continued.*												
Vests, White Flannel	138	3 1½	21 11 3	– –½	– 5 9	– 6	–	3 9 –	3 14 9	– 13 5½	25 19 5½	– 3 9 1/6
Ditto - ditto	17,304	3 1½	2,703 15 –	– –½	36 1 –	– 7	–	504 14 –	540 15 –	97 6 8½	3,341 16 8½	– 3 10 3/8
Ditto - ditto	1,535	3 1½	239 16 10½	– –½	3 3 11½	1 –	–	76 15 –	79 18 11½	14 7 9¾	334 3 7¾	– 4 4¼
Shifts	2	2 5	– 4 10	– –½	– – 1	– 7	–	– 1 2	– 1 3	– – 2¾	– 6 3¾	– 3 2
Kilts, Staff, Highland	1	28 6	1 8 6	– –½	– – –½	2 6	–	– 2 6	– 2 6½	– – 5½	1 11 6	1 11 6
Kilts, Serjeants, Highland	4	20 4	4 1 4	– –½	– – 2	2 6	–	– 10 –	– 10 2	– 1 10	4 13 4	1 3 4
Ditto - - ditto	2	20 4	2 – 8	– –½	– – 1	2 –	–	– 4 –	– 4 1	– – 8¾	2 5 5¾	1 2 9
Kilts, Privates, Highland	4	15 4	3 1 4	– –½	– – 2	2 –	–	– 8 –	– 8 2	– 1 5½	3 10 11½	– 17 9
				per dozen.								
Hose, Powder, yards	1,666	– 1	6 18 10	– 1	– 11 6¾	– –¼	–	1 14 8½	2 6 3¼	– 8 4	9 13 5¼	– – 1 3/8
Horse Rubbers	5,123	– 9	192 2 3	– 1	1 15 7	– –¾	–	16 – 2¼	17 15 9¼	3 4 –½	213 2 –¾	– – 10
Ditto	36	– 9	1 7 –	– 1	– – 3	– 4	per dozen	– 1 –	– 1 3	– – 2¾	1 8 5¾	– – 9½
Ditto	6,184	– 9	231 18 –	– 1	2 2 11¼	– 5	"	10 14 8¾	12 17 8	2 6 4½	247 2 –½	– – 9 5/8
Shirts, Grey Flannel, General Service	210	4 11	51 12 6	– –½	– 8 9	– 6	–	5 5 –	5 13 9	1 – 5¾	58 6 8¾	– 5 6 5/8
Ditto - - - ditto	2,482	4 11	610 3 2	– –½	5 3 5	– 7	–	72 7 10	77 11 3	13 19 2½	701 13 7½	– 5 7 13/16
Shirts, Grey Flannel, Zouaves	116	4 10½	28 5 6	– –½	– 4 10	– 6	–	2 18 –	3 2 10	– 11 3¾	31 19 7¾	– 5 6
Shirts, White Cotton, General Service	1,554	2 1¼	163 9 10½	– –½	3 4 9	– 6	–	38 17 –	42 1 9	7 11 6¼	213 3 1¾	– 2 8 7/8
Ditto - - - ditto	38	2 1¼	3 19 11½	– –½	– 1 7	1 –	–	1 18 –	1 19 7	– 7 1½	6 6 8	– 3 4
Wings, Drummers - - - pairs	2	2 6	– 5 –	– –⅛	– – –¼	1 6	–	– 3 –	– 3 –¼	– – 6½	– 8 6¾	– 4 3 3/8
Gaiters, Zouaves - - - "	2,555	– 9½	101 2 8½	– 1	10 12 11	1 3	–	159 13 9	170 6 8	30 13 2½	302 2 7	– 2 4 3/8
Ditto - ditto - - - "	813	– 9½	32 3 7½	– 1	3 7 9	1 2	–	47 8 6	50 16 3	9 2 11	92 2 9½	– 2 3 1/5
Handkerchiefs	300	1 1½	16 17 6	– –⅛	– 3 1½	– 1½	–	1 17 6	2 – 7½	– 7 3¾	19 5 5¼	– 1 3 7/16
Covers, Canteen, Black Duck	1,281	– 3	16 – 3	– –⅛	– 13 4¼	– 2	–	10 13 6	11 6 10¼	2 – 10	29 7 11¼	– – 5½
Ditto - - - White Duck	3	– 2¾	– – 8¼	– –⅛	– – –½	– 3	–	– – 9	– – 9½	– – 1¾	– 1 7½	– – 6½
Holdalls	27,006	– 5	562 12 6	– –½	56 5 3	– 2	–	225 1 –	281 6 3	50 12 8¾	894 11 5¾	– – 7 15/16
Shirts, White Cotton, Zouaves	888	2 –¾	91 11 6	– –½	1 17 –	– 6	–	22 4 –	24 1 –	4 6 7	119 19 1	– 2 8 4/9
Puggarees	94	1 8½	8 – 7	– –⅛	– – 11¾	– 2	–	– 15 8	– 16 7¾	– 3 –	9 – 2¾	– 1 11
Leggings, Brown, Canvas	4,007	2 5½	492 10 6½	– 1	16 13 11	1 6	–	300 10 6	317 4 5	57 2 –	866 16 11½	– 4 3 15/16
Ditto - - ditto	5	2 5½	– 12 3½	– 1	– – 5	1 4	–	– 6 8	– 7 1	– 1 3½	1 – 8	– 4 1½
Shirts, White Flannel, for Abyssinia	947	3 11	185 9 1	– –½	1 19 5½	1 –	–	47 7 –	49 6 5½	8 17 6½	243 13 1	– 5 1¾
Water Bottles, Covered	97	– 5½	2 4 5½	– –⅛	– 1 –¼	– 2½	–	1 – 2½	1 1 2¾	– 3 9¾	3 9 6	– – 8 5/8
Ditto - - ditto	5,402	– 5½	123 15 11	– –⅛	2 16 3¼	– 2	–	45 – 4	47 16 7¼	8 12 2¼	180 4 8½	– – 8
Bags, Messengers	1	2 3	– 2 3	– –¼	– – –¼	1 –	–	– 1 –	– 1 –¼	– – 2¼	– 3 5½	– 3 5½

Infantry:																								
Chacos, Staff	526	4	6¼	118	17	11½	–	1½	3	5	9	2	3	–	59	3	6	62	9	3	11	4	10½	192	12	1	–	7	3⅞
Ditto Privates	44,935	2	7¼	5,850	18	2¾	–	1½	280	16	10½	–	10 3/16	–	1,907	7	11¼	2,188	4	9¾	393	17	8½	8,433	–	9	–	3	9 1/24
Rifle Volunteers:																													
Chacos, Staff	8	5	–½	2	–	4	–	1½	–	1	–	2	3	–	–	18	–	–	19	–	–	3	5	3	2	9	–	7	10⅛
Ditto Privates	126	2	6¼	15	17	7½	–	1½	–	15	9	–	10½	–	5	10	3	6	6	–	1	2	8	23	6	3½	–	3	8½
Enrolled Pensioners:																													
Chacos, Staff	63	5	10	18	7	6	–	1½	–	7	10½	2	4	–	7	7	–	7	14	10½	1	7	10¾	27	10	3¼	–	8	8⅞
Ditto Serjeants	302	2	9¾	42	9	4½	–	1½	1	17	9	–	11¾	–	14	15	8½	16	13	5½	3	–	–¼	62	2	10¼	–	4	1⅜
Ditto Privates	1,356	2	7¼	176	11	3	–	1½	8	9	6	–	10¾	–	60	14	9	69	4	3	12	9	2¼	258	4	8¼	–	3	9¾
Rifles:																													
Chacos, Staff	28	5	–½	7	1	2	–	1½	–	3	6	2	3	–	3	3	–	3	6	6	–	11	11½	10	19	7½	–	7	10⅛
Ditto Privates	610	2	6¼	76	17	8½	–	1½	3	16	3	–	10½	–	26	13	9	30	10	–	5	9	9¼	112	17	5¾	–	3	8⅜
Patterns:																													
Chacos, O. R.	10	2	4	1	3	4	–	1½	–	1	3	–	10½	–	–	8	9	–	10	–	–	1	9¾	1	15	1¾	–	3	6⅛
Cape Mounted Rifles:																													
Kepis, Staff	1	4	8¾	–	4	8¾	–	1½	–	–	1½	2	–	–	–	2	–	–	2	1½	–	–	4¼	–	7	2½	–	7	2½
Ditto Serjeants	1	2	1	–	2	1	–	1½	–	–	1½	–	10	–	–	–	10	–	–	11½	–	–	2	–	3	2½	–	3	2½
Ditto Privates	2	2	1	–	4	2	–	1½	–	–	3	–	10	–	–	1	8	–	1	11	–	–	4	–	6	5	–	3	2½
Army Hospital Corps:																													
Chacos, Serjeants	11	2	11¾	1	12	9¼	–	1½	–	1	4½	1	2½	–	–	13	3½	–	14	8	–	2	7¾	2	10	1½	–	4	6¾
Infantry:																													
Covers, Chaco	181	–	3	2	5	3	–	–¼	–	3	9¼	–	3	–	2	5	3	2	9	–¼	–	8	9¾	5	3	1	–	–	6⅞
Ditto ditto	49,462	–	3	618	5	6	–	–¼	51	10	5½	–	2	–	412	3	8	463	14	1½	83	9	4¼	1,165	8	11¾	–	–	5⅔
Rifle Volunteers:																													
Covers, Chaco	27	–	3	–	6	9	–	–¼	–	–	6¾	–	2	–	–	4	6	–	5	–¾	–	–	10¾	–	12	8½	–	–	5⅝
Enrolled Pensioners:																													
Covers, Chaco	473	–	3	5	18	3	–	–¼	–	9	10¼	–	2¾	–	5	8	4¾	5	18	3	1	1	3¾	12	17	9¾	–	–	6½
Rifles:																													
Covers, Chaco	130	–	3	1	12	6	–	–¼	–	2	8½	–	2	–	1	1	8	1	4	4½	–	4	4¾	3	1	3¼	–	–	5⅝
Highlanders:																													
Covers, Chaco	588	–	4¼	10	8	3	–	–¼	–	12	3	–	4	–	9	16	–	10	8	3	1	17	5¾	22	13	11¾	–	–	9¼

No. 10.—Royal Army Clothing Factory, Pimlico—Statement (B.) Garments Made up during the Year 1867–8—*continued.*

Service and Description.	Number.	Cost of Material. Rate. s. d.	Cost of Material. £. s. d.	Labour. Cutting. Rate. s. d.	Labour. Cutting. £. s. d.	Labour. Making. Rate. Hand. s. d.	Labour. Making. Rate. Machine. s. d.	Labour. Making. £. s. d.	Labour. Total Direct Labour. £. s. d.	Indirect Expenditure. £. s. d.	Total Expenditure. £. s. d.	Rate per Garment. £. s. d.
Infantry:												
Covers, Chaco, White Cotton	2,487	– 7	72 10 9	– –½	5 3 7½	1 –	–	124 7 –	129 10 7½	23 6 3¾	225 7 8¼	– 1 9¾
Cape Mounted Rifles:												
Covers, Kepi	1	– 3	– – 3	– –¼	– – –¼	– 3	–	– – 3	– – 3¼	– – –½	– – 6¾	– – 6¾
Cavalry:												
Covers, Busby, White Cotton	27	– 8	– 18 –	– –½	– 1 1⅓	– 4	–	– 9 –	– 10 1½	– 1 9¾	1 9 11¼	– 1 1¼
Highland:												
Covers, Bonnet	50	– 7	1 9 2	– –½	– 2 1	– 4	–	– 16 8	– 18 9	– 3 4½	2 11 3½	– 1 –⅓
Infantry:												
Caps, Forage, Staff	1,037	2 9¾	145 16 6¾	– 1½	6 9 7½	1 –	–	51 17 –	58 6 7½	10 10 –	214 13 2¼	– 4 1 1/16
Ditto - ditto - ditto	3	3 5	– 10 3	– 1½	– – 4½	1 3	–	– 3 9	– 4 1½	– – 8¾	– 15 1¼	– 5 –⅜
Ditto - ditto - ditto	11	3 5	1 17 7	– 1½	– 1 4½	1 2	–	– 12 10	– 14 2½	– 2 6½	2 14 4	– 4 11¼
Ditto - ditto - ditto	14	3 5	2 7 10	– 1½	– 1 9	1 4	–	– 18 8	1 – 5	– 3 8	3 11 11	– 5 1⅝
Military Prisons:												
Caps, Forage, C. Warders	1	7 2	– 7 2	– 1½	– – 1½	1 4	–	– 1 4	– 1 5½	– – 3¼	– 8 10¾	– 8 10¾
Infantry:												
Covers, Forage Cap, Staff	673	– 2¾	7 14 2¾	– –¼	– 14 –½	– 3	–	8 8 3	9 2 3¼	1 12 9¾	18 9 3¾	– – 6 3/5
Ditto - ditto - ditto	342	– 2¾	3 18 4½	– –¼	– 7 1½	– 2	–	2 17 –	3 4 1½	– 11 6½	7 14 –½	– – 5⅜
Ditto - ditto - ditto	10	– 2¾	– 2 3½	– –¼	– – 2½	– 6	–	– 5 –	– 5 2½	– – 11¼	– 8 5¼	– – 10⅙
Ditto - ditto - ditto	34	– 2¾	– 7 9½	– –¼	– – 8½	– 4	–	– 11 4	– 12 –½	– 2 2	1 2 –	– – 7 13/17
For India:												
Puggarees	103	1 8½	8 15 11½	– –¼	– 2 1¾	– 4	–	1 14 4	1 16 5¾	– 6 6¾	10 19 –	– 2 1½
Helmets	103	4 8¼	24 2 9¾	– –¼	– 2 1¾	1 6	–	7 14 6	7 16 7¾	1 8 2¼	33 7 7¾	– 6 5¾
Covers	206	– 5½	4 14 5	– –¼	– 4 3½	– 8	–	6 17 4	7 1 7½	1 5 6	13 1 6½	– 1 3¼
Foot Guards:												
Chevrons, Gold, 2 bars	6	1 11	– 11 6	– –⅛	– – –¾	– 4	–	– 2 –	– 2 –¾	– – 4⅓	– 13 11¼	– 2 4
Ditto - Worsted, 3 bars, Tunic	82	– 4½	1 10 9	– –⅛	– – 10¼	– 3	–	1 – 6	1 1 4¼	– 3 10¼	2 15 11½	– – 8 2/11

Various Services:																								
Chevrons, Gold, 4 bars - - - -	265	3	2	41	19	2	–	–	$\frac{1}{8}$	–	2	$9\frac{1}{4}$	–	6	–	6	12	6	6	15	$3\frac{1}{2}$	1	4	3	49	18	$8\frac{1}{4}$	–	3	$9\frac{1}{4}$
Ditto - ditto 4 bars - - - -	11	3	2	1	14	10	–	–	$\frac{1}{8}$	–	–	$1\frac{1}{4}$	–	4	–	–	3	8	–	3	$9\frac{1}{4}$	–	–	$8\frac{1}{2}$	1	19	$3\frac{3}{4}$	–	3	7
Ditto - ditto 4 bars - - - -	4	3	2	–	12	8	–	–	$\frac{1}{8}$	–	–	$-\frac{1}{2}$	–	4	–	–	1	4	–	1	$4\frac{1}{2}$	–	–	3	–	14	$8\frac{1}{2}$	–	3	7
Ditto - ditto 3 bars - - - -	4,985	2	4	581	11	8	–	–	$\frac{1}{8}$	2	11	$11\frac{1}{4}$	–	$4\frac{1}{2}$	–	93	9	$4\frac{1}{2}$	96	1	$3\frac{3}{4}$	17	5	$4\frac{1}{2}$	694	18	$4\frac{1}{4}$	–	2	$9\frac{4}{9}$
Ditto - ditto 3 bars - - - -	212	2	4	24	14	8	–	–	$\frac{1}{8}$	–	2	$2\frac{1}{2}$	–	3	–	2	13	–	2	15	$2\frac{1}{2}$	–	9	$11\frac{1}{4}$	27	19	$9\frac{3}{4}$	–	2	$7\frac{5}{7}$
Ditto - ditto 2 bars - - - -	685	1	7	54	4	7	–	–	$\frac{1}{8}$	–	7	$1\frac{1}{2}$	–	3	–	8	11	3	8	18	$4\frac{1}{2}$	1	12	$1\frac{1}{4}$	64	15	$-\frac{3}{4}$	–	1	$10\frac{5}{7}$
Ditto - ditto 2 bars - - - -	32	1	7	2	10	8	–	–	$\frac{1}{8}$	–	–	4	–	4	–	–	10	8	–	11	–	–	1	$11\frac{3}{4}$	3	3	$7\frac{3}{4}$	–	2	–
Ditto - ditto 2 bars - - - -	12	1	7	–	19	–	–	–	$\frac{1}{8}$	–	–	$1\frac{1}{2}$	–	3	–	–	3	–	–	3	$1\frac{1}{2}$	–	–	$6\frac{3}{4}$	1	2	$8\frac{1}{4}$	–	1	$10\frac{2}{3}$
Ditto - ditto 1 bar - - - -	60	–	10	2	10	–	–	–	$\frac{1}{8}$	–	–	$7\frac{1}{2}$	–	1	–	–	5	–	–	5	$7\frac{1}{2}$	–	1	–	2	16	$7\frac{1}{2}$	–	–	$11\frac{1}{4}$
Ditto - ditto 1 bar - - - -	939	–	10	39	2	6	–	–	$\frac{1}{8}$	–	9	$9\frac{1}{2}$	–	$1\frac{1}{2}$	–	5	17	$4\frac{1}{2}$	6	7	2	1	2	$10\frac{3}{4}$	46	12	$6\frac{3}{4}$	–	–	$11\frac{7}{8}$
Ditto - ditto 1 bar - - - -	303	–	10	12	12	6	–	–	$\frac{1}{8}$	–	3	2	–	1	–	1	5	3	1	8	5	–	5	$1\frac{1}{2}$	14	6	$-\frac{1}{2}$	–	–	$11\frac{1}{3}$
Ditto - ditto 1 bar - - - -	145	–	10	6	–	10	–	–	$\frac{1}{8}$	–	1	6	–	$1\frac{1}{2}$	–	–	18	$1\frac{1}{2}$	–	19	$7\frac{1}{2}$	–	3	$6\frac{1}{4}$	7	3	$11\frac{3}{4}$	–	–	$11\frac{15}{16}$
Militia:																														
Chevrons, Silver, 4 bars - - -	243	3	$1\frac{1}{2}$	37	19	$4\frac{1}{2}$	–	–	$\frac{1}{8}$	–	2	$6\frac{1}{2}$	–	6	–	6	1	6	6	4	$-\frac{1}{2}$	1	2	4	45	5	9	–	3	$8\frac{3}{4}$
Ditto - ditto 3 bars - - -	412	2	$3\frac{3}{4}$	47	12	9	–	–	$\frac{1}{8}$	–	4	$3\frac{1}{2}$	–	$4\frac{1}{2}$	–	7	14	6	7	18	$9\frac{1}{2}$	1	8	7	57	–	$1\frac{1}{2}$	–	2	$9\frac{1}{2}$
Ditto - ditto 1 bar - - - -	395	–	$9\frac{3}{4}$	16	–	$11\frac{1}{4}$	–	–	$\frac{1}{8}$	–	4	$1\frac{1}{2}$	–	$1\frac{1}{2}$	–	2	9	$4\frac{1}{2}$	2	13	6	–	10	2	19	4	$7\frac{1}{4}$	–	–	$11\frac{5}{8}$
Ditto Worsted, 4 bars - - -	50	–	4	–	16	8	–	–	$\frac{1}{8}$	–	–	$6\frac{1}{4}$	–	4	–	–	16	8	–	17	$2\frac{1}{4}$	–	3	$1\frac{1}{4}$	1	16	$11\frac{1}{2}$	–	–	$8\frac{7}{8}$
Ditto - ditto 3 bars - - -	6,408	–	3	80	2	–	–	–	$\frac{1}{8}$	3	6	9	–	3	–	80	2	–	83	8	9	15	–	$4\frac{1}{2}$	178	11	$1\frac{1}{2}$	–	–	$6\frac{7}{16}$
Ditto - ditto 2 bars - - -	48	–	2	–	8	–	–	–	$\frac{1}{4}$	–	1	–	–	2	–	–	8	–	–	9	–	–	1	$7\frac{1}{2}$	–	18	$7\frac{1}{2}$	–	–	$4\frac{3}{4}$
Ditto - ditto 2 bars - - -	8,742	–	2	72	17	–	–	–	$\frac{1}{8}$	4	11	$-\frac{3}{4}$	–	2	–	72	17	–	77	8	$-\frac{3}{4}$	13	18	$7\frac{3}{4}$	164	3	$8\frac{1}{2}$	–	–	$4\frac{1}{2}$
Ditto - ditto 1 bar - - -	72	–	1	–	6	–	–	–	$\frac{1}{4}$	–	1	6	–	1	–	–	6	–	–	7	6	–	1	4	–	14	10	–	–	$2\frac{1}{2}$
Ditto - ditto 1 bar - - -	8,822	–	1	36	15	2	–	–	$\frac{1}{8}$	4	11	$10\frac{3}{4}$	–	1	–	36	15	2	41	7	$-\frac{3}{4}$	7	8	$10\frac{1}{4}$	85	11	1	–	–	$2\frac{1}{3}$
Badges, Good Conduct, Gold, 1 bar -	326	–	9	12	4	6	–	–	$\frac{1}{8}$	–	3	$4\frac{3}{4}$	–	1	–	1	7	2	1	10	$6\frac{3}{4}$	–	5	6	14	–	$6\frac{3}{4}$	–	–	$10\frac{1}{3}$
Ditto - - ditto - 2 bars -	335	1	6	25	2	6	–	–	$\frac{1}{8}$	–	3	6	–	2	–	2	15	10	2	19	4	–	11	$10\frac{1}{2}$	28	13	$8\frac{1}{2}$	–	1	$8\frac{1}{2}$
Ditto - - ditto - 3 bars -	84	2	3	9	9	–	–	–	$\frac{1}{8}$	–	–	$10\frac{1}{2}$	–	3	–	1	1	–	1	1	$10\frac{1}{2}$	–	3	$11\frac{1}{4}$	10	14	$9\frac{3}{4}$	–	2	$6\frac{5}{7}$
Ditto - - ditto - 4 bars -	69	3	–	10	7	–	–	–	$\frac{1}{8}$	–	–	$8\frac{1}{2}$	–	4	–	1	3	–	1	3	$8\frac{1}{2}$	–	4	$3\frac{1}{4}$	11	14	$11\frac{3}{4}$	–	3	$4\frac{5}{6}$
Ditto - - ditto - 5 bars -	22	3	9	4	2	6	–	–	$\frac{1}{8}$	–	–	$2\frac{3}{4}$	–	5	–	–	9	2	–	9	$4\frac{3}{4}$	–	1	$8\frac{1}{4}$	4	13	7	–	4	$3\frac{1}{32}$
Ditto - - - Worsted, 1 bar.	200	–	$-\frac{1}{2}$	–	8	4	–	–	$\frac{1}{8}$	–	2	1	–	1	–	–	16	8	–	18	9	–	3	$4\frac{1}{2}$	1	10	$5\frac{1}{2}$	–	–	$1\frac{13}{16}$
Ditto - - ditto - - 1 bar	1,881	–	$-\frac{1}{2}$	3	18	$4\frac{1}{2}$	–	–	$\frac{1}{8}$	–	19	$7\frac{1}{4}$	–	$-\frac{1}{2}$	–	3	18	$4\frac{1}{2}$	4	17	$11\frac{3}{4}$	–	17	$2\frac{1}{4}$	9	13	$6\frac{1}{2}$	–	–	$1\frac{1}{4}$
Ditto - - ditto - - 1 bar	19,638	–	$-\frac{1}{2}$	40	18	3	–	–	$\frac{1}{8}$	10	4	$6\frac{3}{4}$	–	$-\frac{1}{2}$	–	40	18	3	51	2	$9\frac{3}{4}$	9	3	$1\frac{1}{2}$	101	4	$2\frac{1}{4}$	–	–	$1\frac{3}{9}$
Ditto - - ditto - - 2 bars	100	–	1	–	8	4	–	–	$\frac{1}{8}$	–	1	$-\frac{1}{2}$	–	2	–	–	16	8	–	17	$8\frac{1}{2}$	–	3	$2\frac{1}{4}$	1	9	$2\frac{3}{4}$	–	–	$3\frac{1}{2}$
Ditto - - ditto - - 2 bars	200	–	1	–	16	8	–	–	$\frac{1}{8}$	–	2	1	–	1	–	–	16	8	–	18	9	–	3	$3\frac{3}{4}$	1	18	$8\frac{3}{4}$	–	–	$2\frac{3}{8}$
Ditto - - ditto - - 2 bars	6,346	–	1	26	8	10	–	–	$\frac{1}{8}$	3	6	$1\frac{1}{4}$	–	1	–	26	8	10	29	14	$11\frac{1}{4}$	5	7	1	61	19	$10\frac{1}{4}$	–	–	$2\frac{1}{3}$
Ditto - - ditto - - 3 bars	52	–	$1\frac{1}{2}$	–	6	6	–	–	$\frac{1}{8}$	–	–	$6\frac{1}{2}$	–	$1\frac{1}{2}$	–	–	6	6	–	7	$-\frac{1}{2}$	–	1	2	–	14	$8\frac{1}{2}$	–	–	$3\frac{5}{13}$
Ditto - - ditto - - 3 bars	3,549	–	$1\frac{1}{2}$	22	3	$7\frac{1}{2}$	–	–	$\frac{1}{8}$	1	16	$11\frac{1}{2}$	–	$1\frac{1}{2}$	–	22	3	$7\frac{1}{2}$	24	–	7	4	6	6	50	10	$8\frac{1}{2}$	–	–	$3\frac{3}{8}$
Ditto - - ditto - - 4 bars	1,727	–	2	14	7	10	–	–	$\frac{1}{8}$	–	18	–	–	2	–	14	7	10	15	5	10	2	15	$-\frac{3}{4}$	32	8	$8\frac{3}{4}$	–	–	$4\frac{1}{2}$
Ditto - - ditto - - 5 bars	523	–	$2\frac{1}{2}$	5	8	$11\frac{1}{2}$	–	–	$\frac{1}{8}$	–	5	$5\frac{1}{2}$	–	$2\frac{1}{2}$	–	5	8	$11\frac{1}{2}$	5	14	5	1	–	7	12	3	$11\frac{1}{2}$	–	–	$5\frac{5}{8}$
Ditto - - ditto - - 6 bars	29	–	3	–	7	3	–	–	$\frac{1}{8}$	–	–	$3\frac{3}{4}$	–	3	–	–	7	3	–	7	$6\frac{3}{4}$	–	1	$3\frac{1}{4}$	–	16	1	–	–	$6\frac{5}{8}$
Ditto - - ditto - - 7 bars	2	–	$3\frac{1}{2}$	–	–	7	–	–	$\frac{1}{8}$	–	–	$-\frac{1}{4}$	–	$3\frac{1}{2}$	–	–	–	7	–	–	$7\frac{1}{4}$	–	–	$1\frac{1}{2}$	–	1	$3\frac{3}{4}$	–	–	8
TOTAL - - - £.				220,333	14	$-\frac{3}{4}$		–		4,531	14	7		–		35,743	1	$9\frac{3}{4}$	40,274	16	$4\frac{3}{4}$	7,249	2	$2\frac{3}{4}$	267,857	12	$8\frac{1}{4}$		—	

Examined, *James C. Hurst*,
Accountant, and Auditor to the Manufacturing Departments.

No. 10.—Royal Army Clothing Factory, Pimlico—*continued.*

STATEMENT (C.)—Garments Altered during the Year 1867-8.

Service and Description.	No. Altered.	Nature of Alteration.	Value of Material Used. Rate. s. d.	Value of Material Used. £. s. d.	Cost of Cutting, Trimmings, &c. for Alteration. Rate. s. d.	Cost of Cutting, Trimmings, &c. £. s. d.	Piece Work. Rate. s. d.	Piece Work. £. s. d.	Total Direct Labour. £. s. d.	Indirect Expenditure. £. s. d.	Total Expenditure. £. s. d.
Tunics:											
Foot Guards:											
Staff Undress	1	Repaired and altered	– 6	– – 6	–	– –	6 –	– 6 –	– 6 –	– 1 1	– 7 7
Ditto, Dress	1	ditto - ditto	– 6	– – 6	–	– –	10 –	– 10 –	– 10 –	– 1 9	– 12 3
Infantry:											
Staff Serjeants	2	ditto - ditto	– 4	– – 8	–	– –	6 6	– 13 –	– 13 –	– 2 3½	– 15 11½
Ditto	1	ditto - ditto	– 3	– – 3	–	– –	4 6	– 4 6	– 4 6	– – 9¾	– 5 6¾
Ditto	1	ditto - ditto	– 4	– – 4	–	– –	8 –	– 8 –	– 8 –	– 1 5¼	– 9 9¼
Ditto	2	ditto - ditto	– 2	– – 4	–	– –	2 6	– 5 –	– 5 –	– – 10¾	– 6 2¾
Ditto	1	ditto - ditto	– 2	– – 2	–	– –	3 –	– 3 –	– 3 –	– – 6½	– 3 8½
Serjeants	2	ditto - ditto	– 3	– – 6	–	– –	3 –	– 6 –	– 6 –	– 1 1	– 7 7
Ditto	53	Re-faced and altered	1 1	2 17 5	– –¼	– 1 1¼	3 6	9 5 6	9 6 7¼	1 13 7½	13 17 7¾
Ditto	121	ditto - ditto	1 –	6 1 –	– –¼	– 2 6¼	3 3	19 13 3	19 15 9¼	3 8 8¾	29 5 6
Ditto	14	ditto - ditto	1 1	– 15 2	– –¼	– – 3½	4 –	2 16 –	2 16 3½	– 10 1½	4 1 7
Ditto	3	Re-faced and new foreparts	4 –	– 12 –	– –¼	– – –¾	2 –	– 6 –	– 6 –¾	– 1 1	– 19 1¾
Ditto	12	Re-faced and buttoned	1 4	– 16 –	– –¼	– – 3	1 10	1 2 –	1 2 3	– 4 –	2 2 3
Ditto	119	Repaired, &c.	1 1	6 8 11	– –¼	– 2 5¾	1 7	9 8 5	9 10 10¾	1 14 4½	17 14 2¼
Ditto	13	ditto	1 1	– 14 1	– –¼	– – 3¼	1 8	1 1 8	1 1 11¼	– 3 11½	1 19 11¾
Ditto	1	ditto	1 1	– 1 1	– –¼	– – –¼	2 3	– 2 3	– 2 3¼	– – 4¾	– 3 9
Ditto	30	ditto	– 3	– 7 6	–	– –	– 6	– 15 –	– 15 –	– 2 8½	1 5 2½
Band	1	Re-faced, &c.	1 3½	– 1 3½	– –¼	– – –¼	2 4	– 2 4	– 2 4¼	– – 5	– 4 –¾
Drummers	24	Altered and repaired	– 6	– 12 –	–	– –	1 8	2 – –	2 – –	– 7 2½	2 19 2½
Ditto	43	ditto	– 4	– 14 4	–	– –	– 6	1 1 6	1 1 6	– 3 10½	1 19 8½
Privates	2,566	Repaired	– 1	10 13 10	–	– –	– 2	21 7 8	21 7 8	3 16 11¾	35 18 5¾
Ditto	1,481	Re-faced and altered	1 –	74 1 –	– –¼	1 10 10¼	1 6	111 1 6	112 12 4¼	18 8 4¼	205 1 8½
Ditto	679	Repaired and altered	– 2	5 13 2	–	– –	– 10	28 5 10	28 5 10	5 1 9¾	39 – 9¾
Rifles:											
Serjeants	43	ditto - ditto	– 2	– 7 2	–	– –	– 10	1 15 10	1 15 10	– 6 5½	2 9 5½
Ditto	42	Strapped and buttoned	– 6	1 1 –	– –⅛	– – 5¼	– 6	1 1 –	1 1 5¼	– 3 10¼	2 6 3½
Buglers	19	Buttoned, &c.	– 3	– 4 9	–	– – –	– 7	– 11 1	– 11 1	– 2 –	– 17 10
Privates	5	Altered and repaired	– 1	– – 5	–	– – –	– 7	– 2 11	– 2 11	– – 6¼	– 3 10¼
Ditto	102	Strapped and buttoned	– 6	2 11 –	– –⅛	– 1 –¾	– 6	2 11 –	2 12 –¾	– 5 4¾	5 12 5¾

Ditto - - -	125	ditto - - ditto - -	– 6	3 2 6	– –⅛	– 1 3¾	– 8	4 3 4	4 4 7¾	– 15 2¾	8 2 4½
Ditto - - -	1,781	Buttoned - - - -	– 3	22 5 3	–	- -	– 4	29 13 8	29 13 8	5 1 10¾	57 – 9¾
Ditto - - -	77	Repaired - - - -	– 1	– 6 5	–	- -	– 1	– 6 5	– 6 5	– 1 1¾	– 13 11¾
Frock Coats:											
Enrolled Pensioners:											
Staff Serjeants - -	1	Repaired and altered - -	– 4	– – 4	–	- -	1 –	– 1 –	– 1 –	– – 2¼	– 1 6¼
Serjeants - - -	1	ditto - - ditto - -	– 3	– – 3	–	- -	1 –	– 1 –	– 1 –	– – 2¼	– 1 5¼
Privates - - -	1	ditto - - ditto - -	– 2	– – 2	–	- -	– 11	– – 11	– – 11	– – 2	– 1 3
Tunics:											
Commissariat Staff Corps:											
Privates - - -	96	Buttoned, &c. - - -	– 5	2 – –	–	- -	– 5	2 – –	2 – –	– 7 2¼	4 7 2¼
Highland:											
Staff Serjeants - -	1	Altered and repaired -	– 6	– – 6	–	- -	1 3	– 1 3	– 1 3	– – 3	– 2 –
Pipers - - - -	1	ditto - - ditto - -	– 3	– – 3	–	- -	1 2	– 1 2	– 1 2	– – 2¾	– 1 7¾
Privates - - -	6	Strapped, buttoned, &c. - -	– 10	– 5 –	– –⅛	– – –¾	1 2	– 7 –	– 7 –¾	– 1 3¼	– 13 4
Ditto - - -	46	Repaired - - - -	– 2	– 7 8	–	- -	– 5	– 19 2	– 19 2	– 3 5½	1 10 3½
Ditto - - -	24	ditto - - - - -	– 1	– 2 –	–	- -	– 1	– 2 –	– 2 –	– – 4	– 4 4
Army Hospital Corps:											
Serjeants - - -	4	Altered and repaired - -	– 2	– – 8	–	- -	– 3	– 1 –	– 1 –	– – 2¼	– 1 10½
Privates - - -	16	ditto - - ditto - -	– 4	– 5 4	–	- -	– 3	– 4 –	– 4 –	– – 8¼	– 10 –¼
Ditto - - -	10	ditto - - ditto - -	– 1	– – 10	–	- -	– 1	– – 10	– – 10	– – 2	– 1 10
Frock Coats:											
Military Store Clerks -	4	Repaired - - - -	– 2	– – 8	–	- -	– 1	– – 4	– – 4	– – –¾	– 1 –¾
Tunics:											
Cavalry:											
Privates - - -	2	Repaired - - - -	– 2	– – 4	–	- -	– 1	– – 2	– – 2	– – –½	– – 6½
Frock Coats:											
Military Prisons - -	1	Repaired - - - -	– 2	– – 2	–	- -	– 1	– – 1	– – 1	– – –¼	– – 3¼
Tunics:											
Of Sorts - - - -	29	Repaired - - - -	– 2	– 4 10	–	- -	– 1	– 2 5	– 2 5	– – 4¾	– 7 7¾
Ditto - - - -	11	Ripped - - - - -	–	– – –	–	- -	– 3	– 2 9	– 2 9	– – 6	– 3 3
Jackets:											
Infantry:											
Staff Serjeants - -	2	Altered and repaired - -	1 6	– 3 –	–	- -	2 6	– 5 –	– 5 –	– – 10¾	– 8 10¾
Ditto - -	6	ditto - - ditto - -	1 3	– 7 6	–	- -	2 –	– 12 –	– 12 –	– 2 1¾	1 1 7¾

No. 10.—Royal Army Clothing Factory, Pimlico—Statement (C.) Garments Altered during the Year 1867–8—*continued.*

Service and Description.	No. Altered.	Nature of Alteration.	Value of Material Used. Rate. s. d.	Value of Material Used. £. s. d.	Cost of Cutting, Trimmings, &c., for Alteration. Rate. s. d.	Cost of Cutting, Trimmings, &c., for Alteration. £. s. d.	Piece Work. Rate. s. d.	Piece Work. £. s. d.	Total Direct Labour. £. s. d.	Indirect Expenditure. £. s. d.	Total Expenditure. £. s. d.
Jackets—*continued.*											
Infantry:											
Serjeants	45	Re-faced, &c.	1 –	2 5 –	– –¼	– – 11¼	1 2	2 12 6	2 13 5¼	– 9 7½	5 8 –¾
Ditto	5	Ditto	1 –	– 5 –	– –¼	– – 1¼	1 3	– 6 3	– 6 4¼	– 1 1¾	– 12 6
Ditto	5	Ditto	1 –	– 5 –	– –¼	– – 1¼	1 5	– 7 1	– 7 2¼	– 1 3¼	– 13 5½
Ditto	22	Ditto	1 –	1 2 –	– –¼	– – 5½	1 6	1 13 –	1 13 5½	– 6 –¼	3 1 5¾
Band	15	Re faced	– 8	– 10 –	– –¼	– – 3¾	– 11	– 13 9	– 14 –¾	– 2 6¼	1 6 7
Privates	3,087	Ditto	– 8	102 18 –	– –¼	3 4 3¾	– 10	128 12 6	131 16 9¾	21 9 5½	256 4 3¼
Ditto	57	Buttoned, &c.	– 1½	– 7 1½	–	– –	– 2	– 9 6	– 9 6	– 1 8½	– 18 4
Ditto	91	ditto	– 1⅓	– 11 4½	–	– –	– 4	1 10 4	1 10 4	– 5 5½	2 7 2
Ditto	9	ditto and repaired	– 2	– 1 6	–	– –	– 6	– 4 6	– 4 6	– – 9¾	– 6 9¾
Ditto	32	ditto and strapped	– 3	– 8 –	– –⅛	– – 4	– 8	1 1 4	1 1 8	– 3 10¾	1 13 6¾
Ditto	560	Re-buttoned	– 1½	3 10 –	–	– –	– 1	2 6 8	2 6 8	– 8 4¾	6 5 –¾
Ditto	18	Repaired	– 1	– 1 6	–	– –	– 3	– 4 6	– 4 6	– – 9¾	– 6 9¾
Ditto	6	Re-faced and buttoned	– 11	– 5 6	– –¼	– – 1½	– 11	– 5 6	– 5 7½	– 1 –¼	– 12 1¾
Ditto	76	Repaired and altered	– 4	1 5 4	–	– –	– 6	1 18 –	1 18 –	– 6 10¼	3 10 2¼
Ditto	4	ditto	– 4	– 1 4	–	– –	– 5½	– 1 10	– 1 10	– – 4	– 3 6
Ditto	2	Re-faced and altered	– 9	– 1 6	– –¼	– – –½	1 6	– 3 –	– 3 –½	– – 6½	– 5 1
Ditto	605	Repaired	– 1	2 10 5	–	– –	– 1	2 10 5	2 10 5	– 9 1	5 9 11
Ditto	116	ditto	– 1	– 9 8	–	– –	– 2	– 19 4	– 19 4	– 3 5¾	1 12 5¾
Rifles:											
Staff Serjeants	1	Repaired and altered	1 –	– 1 –	–	– –	1 7	– 1 7	– 1 7	– – 3½	– 2 10½
Ditto	1	ditto	1 2	– 1 2	–	– –	2 –	– 2 –	– 2 –	– – 4¼	– 3 6¼
Serjeants	4	Re-faced	– 9	– 3 –	– –¼	– – 1	1 –	– 4 –	– 4 1	– – 8¾	– 7 9¾
Ditto	1	Strapped and buttoned	– 4	– – 4	– –¼	– – –¼	– 7½	– – 7½	– – 7¾	– – 1½	– 1 1¼
Ditto	18	Repaired	– 1	– 1 6	–	– –	– 3	– 4 6	– 4 6	– – 9¾	– 6 9¾
Band	2	ditto	– 1	– – 2	–	– –	– 4	– – 8	– – 8	– – 1½	– – 11½
Privates	1	Buttoned and repaired	– 2	– – 2	–	– –	– 5	– – 5	– – 5	– – 1	– – 8
Ditto	48	Repaired and altered	– 1	– 4 –	–	– –	– 3	– 12 –	– 12 –	– 2 2	– 18 2
Ditto	150	Buttoned	– 1½	– 18 9	–	– –	– 1	– 12 6	– 12 6	– 2 2¾	1 13 5¾
Highlanders:											
Serjeants	59	Buttoned	– 1½	– 7 4½	–	– –	– 1	– 4 11	– 4 11	– – 10½	– 13 2
Privates	125	ditto	– 1½	– 15 7½	–	– –	– 1	– 10 5	– 10 5	– 1 10½	1 7 11

West India Regiments:																														
Serjeants	15	Repaired	–	1	–	1	3	–	–	–	–	1	–	1	3	–	1	3	–	–	2¾	–	2	8¾
Band	3	ditto	–	1	–	–	3	–	–	–	–	1	–	–	3	–	–	3	–	–	–½	–	–	6½
Drummers	1	ditto	–	1	–	–	1	–	–	–	–	1	–	–	1	–	–	1	–	–	–	–	–	2
Privates	68	ditto	–	1	–	5	8	–	–	–	–	1	–	5	8	–	5	8	–	1	–¼	–	12	4¼
Royal Artillery:																														
Privates	3	Buttoned	–	1½	–	–	4½	–	–	–	–	1	–	–	3	–	–	3	–	–	–½	–	–	8
Customs:																														
Pea	7	Repaired and altered	–	6	–	3	6	–	–⅛	–	–	1	2	–	–	14	–	–	14	1	–	2	6¼	1	–	1¼
Ditto	190	Ditto	–	3	2	7	6	–	–⅛	–	1	11¾	–	1	–	15	10	–	17	9¾	–	3	2½	3	8	6¼
Guards:																														
Serjeants	71	Buttoned	–	1½	–	8	10½	–	–	–	–	1	–	5	11	–	5	11	–	1	1¼	–	15	10¾
Cavalry:																														
Privates	1	ditto	–	1½	–	–	1½	–	–	–	–	1	–	–	1	–	–	1	–	–	–	–	–	2½
Of sorts	58	Ripped	–	–	–	–	–	–	–	–	–	1½	–	7	3	–	7	3	–	1	3¾	–	8	6¾
Trowsers:																														
Infantry:																														
Staff Serjeants	5	Re-striped, &c.	–	7	–	2	11	–	–⅛	–	–	–¾	1	2	–	5	10	–	5	10¾	–	1	–¾	–	9	10½
Ditto	2	ditto	–	7	–	1	2	–	–⅛	–	–	–¼	1	3	–	2	6	–	2	6¼	–	–	5½	–	4	1¾
Ditto	2	Re-made	–	2	–	–	4	–	–	–	–	–	2	2	–	4	4	–	4	4	–	–	9¼	–	5	5¼
Ditto	2	Altered and repaired	–	7	–	1	2	–	–	–	–	–	1	–	–	2	–	–	2	–	–	–	4¼	–	3	6¼
Serjeants	69	Re-made	–	2	–	11	6	–	–	–	–	–	1	–	3	9	–	3	9	–	–	12	5¼	4	12	11¼
Privates	341	Repaired	–	1	1	8	5	–	–	–	–	–	1	–	1	8	5	1	8	5	–	5	1½	3	1	11½
Ditto	11	ditto	–	2	–	1	10	–	–	–	–	–	5	–	4	7	–	4	7	–	–	–	9¾	–	7	2¾
Ditto	30	Re-pocketed	–	4	–	10	–	–	–⅛	–	–	3¾	–	9	1	2	6	1	2	9¾	–	4	1¼	1	16	11
Ditto	16	Altered	–	1	–	1	4	–	–	–	–	–	–	2	–	2	8	–	2	8	–	–	5¾	–	4	5¾
Ditto Black Tartan	5	ditto	–	1	–	–	5	–	–	–	–	–	–	2	–	–	10	–	–	10	–	–	2	–	1	5
Serge, Blue, Staff	2	Repaired	–	2	–	–	4	–	–	–	–	–	–	2	–	–	4	–	–	4	–	–	–¾	–	–	8¾
Ditto Privates	382	ditto	–	2	3	3	8	–	–	–	–	–	–	2	3	3	8	3	3	8	–	11	5½	6	18	9½
Ditto	681	ditto	–	2	5	13	6	–	–	–	–	–	–	3	8	10	3	8	10	3	1	10	7¾	15	14	4¾
Ditto	338	ditto	–	2	2	16	4	–	–	–	–	–	–	4	5	12	8	5	12	8	1	–	3¼	9	9	3¼
Ditto	80	Re-striped, &c.	–	5	1	13	4	–	–⅛	–	–	10	–	7	2	6	8	2	7	6	–	8	6½	4	9	4½
Ditto	404	ditto	–	5	8	8	4	–	–⅛	–	4	2½	–	8	13	9	4	13	13	6½	2	6	8¾	24	8	7¼
Rifles:																														
Serjeants	4	Re-pocketed	–	4	–	1	4	–	–⅛	–	–	–½	–	8	–	2	8	–	2	8½	–	–	5¾	–	4	6¼
Privates	1	ditto	–	4	–	–	4	–	–⅛	–	–	–¼	–	8	–	–	8	–	–	8¼	–	–	1½	–	1	1¾
Tartan Green, Privates	113	ditto	–	4	1	17	8	–	–⅛	–	1	2	–	8	3	15	4	3	16	6	–	13	9½	6	7	11½

No. 10.—Royal Army Clothing Factory, Pimlico—Statement (C.) Garments Altered during the year 1867-8—*continued.*

Service and Description.	No. Altered.	Nature of Alteration.	Value of Material Used. Rate. s. d.	Value of Material Used. £. s. d.	Cost of Cutting, Trimmings, &c. for Alteration. Rate. s. d.	Cost of Cutting, Trimmings, &c. £. s. d.	Piece Work. Rate. s. d.	Piece Work. £. s. d.	Total Direct Labour. £. s. d.	Indirect Expenditure. £. s. d.	Total Expenditure. £. s. d.
Trousers—*continued:*											
Army Hospital Corps:											
Sergeants, cloth	2	Re-striped	– 5	– – 10	– –⅛	– – –¼	– 8	– 1 4	– 1 4¼	– – 2¾	– 2 5
Privates ditto	6	ditto	– 5	– 2 6	– –⅛	– – –¾	– 8	– 4 –	– 4 –¾	– – 8¾	– 7 3½
Ditto Blue Serge	112	ditto	– 5	2 6 8	– –⅛	– 1 2	– 8	3 14 8	3 15 10	– 13 7¾	6 16 1¾
Military Store Clerks;											
Cloth	1	Re-striped	– 5	– – 5	– –⅛	– – –¼	– 8	– – 8	– – 8¼	– – 1½	– 1 2¾
Military Labourers;											
Blue Serge	65	Re-striped	– 5	1 7 1	– –⅛	– – 8	– 8	2 3 4	2 4 –	– 7 11	3 19 –
Ditto	202	Repaired and altered	– 2	1 13 8	–	– –	– 6	5 1 –	5 1 –	– 18 2½	7 12 10½
West India Regiments:											
Breeches, Dungaree	103	Re-braided on side-seam	– 3	1 5 9	–	– –	– 6	2 11 6	2 11 6	– 9 3¼	4 6 6¼
Cavalry:											
Overalls, Privates	3	Re-made	– 2	– – 6	–	– –	2 6	– 7 6	– 7 6	– 1 1¾	– 9 1¾
Commissariat Staff Corps:											
Staff, Serge	15	Re-striped, &c.	– 5	– 6 3	– –⅛	– – 1¾	– 10	– 12 6	– 12 7¾	– 2 3½	1 1 2¼
Privates ditto	433	Re-pocketed	– 4	7 4 4	– –⅛	– 4 6¼	– 6	10 16 6	11 1 –¼	1 19 9¾	20 5 2
Infantry:											
Oxford Tartan, O.R.	35	Re-pocketed	– 4	– 11 8	– –⅛	– – 4½	– 6	– 17 6	– 17 10½	– 3 2¾	1 12 9¼
Highlanders;											
Privates	16	Repaired	– 2	– 2 8	–	– –	– 6	– 8 –	– 8 –	– 1 5¼	– 12 1¼
Military Prisons:											
Jean Warders	5	Repaired	– 2	– – 10	–	– –	– 6	– 2 6	– 2 6	– – 5½	– 3 9½
Of Sorts	17	Ditto	– 4	– 5 8	–	– –	1 –	– 17 –	– 17 –	– 3 –¾	1 5 8¾
Ditto	62	Re-striped, &c.	– 5	1 5 10	– –⅛	– – 7¾	– 10	2 11 8	2 12 3¾	– 9 5	4 7 6¾
Ditto	614	Repaired	– 2	5 2 4	–	– –	– 6	15 7 –	15 7 –	2 12 9¾	23 2 1¾

Great Coats:													
Infantry:													
Staff Serjeants - -	1	Repaired - - - -	– 3	– – 3	– –¼	– – –¼	1 3	– 1 3	– 1 3¼	– – 2¾	– 1 9
Serjeants - - -	15	ditto - - - -	– 2	– 2 6	–	- -	– 8	– 10 –	– 10 –	– 1 9½	– 14 3½
Privates - - -	5,810	ditto - - - -	–	- -	–	- -	– 3	72 12 6	72 12 6	11 13 11¾	84 6 5¾
Ditto - - -	372	ditto - - - -	–	- -	–	- -	– 4	6 4 –	6 4 –	1 2 3¾	7 6 3¾
Ditto - - -	456	ditto - - - -	–	- -	–	- -	– 2	3 16 –	3 16 –	– 13 8¾	4 9 8¾
Rifles:											
Serjeants - - -	15	Repaired - - - -	– 1	– 1 3	–	- -	– 2	– 2 6	– 2 6	– – 5½	– 4 2½
Barrack Serjeants - -	1	ditto - - - -	– 1	– – 1	–	- -	– 2	– – 2	– – 2	– – –½	– – 3½
Volunteers - - -	1,854	Re-buttoned and repaired -	– 2	15 9 –	–	- -	– 6	46 7 –	46 7 –	7 19 4¼	69 15 4¼
Ditto - - -	1,489	Repaired - - - -	– 1	6 4 1	–	- -	– 2	12 8 2	12 8 2	2 2 2¼	20 14 5¼
Cloaks:											
Cavalry - - -	88	New collared, &c. - -	– 4	1 9 4	for	– 1 6½	2 –	8 16 –	8 17 6½	1 12 –	11 18 10½
Ditto - - -	150	Repaired and buttoned - -	– 2	1 5 –	–	- -	– 5	3 2 6	3 2 6	– 11 3	4 18 9
Ditto - - -	68	ditto - ditto - -	– 2	– 11 4	–	- -	– 8	2 5 4	2 5 4	– 8 1¼	3 4 9¼
Ditto - - -	1,404	Re-buttoned - - - -	– 2	11 14 –	–	- -	– 2	11 14 –	11 14 –	1 19 7½	25 7 7½
Military Store Clerks -	3	Repaired and altered - -	– 3	– – 9	–	- -	1 6	– 4 6	– 4 6	– – 9½	– 6 –½
Cloaks and Capes:											
Cavalry - - -	7	Repaired and buttoned - -	– 2	– 1 2	–	- -	1 –	– 7 –	– 7 –	– 1 3	– 9 5
Watch Coats - -	2	Repaired - - - -	– 4	– – 8	–	- -	1 –	– 2 –	– 2 –	– – 4¼	– 3 –¼
Capes:											
Cavalry - - -	7	New straps, &c. - - -	– 2	– 1 2	–	- -	– 4	– 2 4	– 2 4	– – 5	– 3 11
Ditto - - -	1	Repaired - - - -	– 1	– – 1	–	- -	– 2	– – 2	– – 2	– – –½	– – 3½
Great Coats:											
Commissariat Staff Corps:											
Staff Serjeants - -	1	Buttoned and repaired - -	– 7	– – 7	–	- -	1 6	– 1 6	– 1 6	– – 3¼	– 2 4¼
Ditto - - -	2	Repaired and altered - -	– 2	– – 4	–	- -	2 6	– 5 –	– 5 –	– – 11	– 6 3
Ditto - - -	2	ditto - ditto - -	– 4	– – 8	–	- -	2 4	– 4 8	– 4 8	– – 19	– 6 2
Ditto - - -	3	ditto - ditto - -	– 3	– – 9	–	- -	– 9	– 2 3	– 2 3	– – 4¾	– 3 4¾
Privates - - -	169	ditto - ditto - -	–	- -	–	- -	– 2	1 8 2	1 8 2	– 5 1	1 13 3
Great Coats of Sorts -	5	Repaired - - - -	– 4	– 1 8	–	- -	– 9	– 3 9	– 3 9	– – 8¼	– 6 1¼
Ditto - - -	370	ditto - - - -	– 1	1 10 10	–	- -	– 2	3 1 8	3 1 8	– 11 1	5 3 7
Ditto - - -	31	ditto - - - -	– 2	– 5 2	–	- -	– 5	– 12 11	– 12 11	– 2 4	1 – 5
Ditto - - -	2,086	Ripped - - - -	– 2	17 17 8	–	- -	– 3	26 1 6	26 1 6	4 8 10	48 8 –
Frocks:											
Infantry:											
Staff, Duck - - -	9	Repaired and altered - -	– 3	– 2 3	–	- -	1 6	– 13 6	– 13 6	– 2 5½	– 18 2½
Ditto - - -	19	ditto - ditto - -	– 2	– 3 2	–	- -	– 9	– 14 3	– 14 3	– 2 6¾	– 19 11¾

No. 10.—Royal Army Clothing Factory, Pimlico—Statement (C.) Garments Altered during the Year 1867–8—*continued.*

Service and Description.	No. Altered.	Nature of Alteration.	Value of Material Used. Rate. s. d.	Value of Material Used. £. s. d.	Cost of Cutting, Trimmings, &c., for Alteration. Rate. s. d.	Cost of Cutting, Trimmings, &c., for Alteration. £. s. d.	Piece Work. Rate. s. d.	Piece Work. £. s. d.	Total Direct Labour. £. s. d.	Indirect Expenditure. £. s. d.	Total Expenditure. £. s. d.
Frocks—*continued.*											
Infantry—*continued.*											
Serjeants, Duck	44	Repaired and altered	– 2	– 7 4	–	–	– 6	1 2 –	1 2 –	– 3 11¼	1 13 3½
Ditto	68	ditto - ditto	– 1	– 5 8	–	–	– 5	1 8 4	1 8 4	5 1½	1 19 1½
Ditto	104	ditto - ditto	– 1	– 8 8	–	–	– 4	1 14 8	1 14 8	6 2¾	2 9 6¾
Privates, Duck	1,212	Re-buttoned and repaired	– 1½	7 11 6	–	–	– 3	15 3 –	15 3 –	2 12 –¾	25 6 6¾
Ditto	896	Re-buttoned	– 1½	5 12 –	–	–	– 1	3 14 8	3 14 8	– 13 5¼	10 – 1½
Ditto	3,152	Repaired	– 1½	19 14 –	– –½	6 11 4	– 2	26 5 4	32 16 8	5 13 2¼	58 3 10½
Staff, Serge	20	Repaired and altered	– 4	– 6 8	–	–	1 –	1 – –	1 – –	– 3 7¼	1 10 3¼
Serjeants, Serge	42	ditto - ditto	– 3	– 10 6	–	–	1 –	2 2 –	2 2 –	– 7 6¾	3 – –¾
Privates, ditto	2,158	Buttoned, &c.	– 1½	13 9 9	–	–	– 2	17 19 8	17 19 8	3 2 2¾	34 11 7¾
Ditto ditto	190	ditto	– 1½	1 3 9	–	–	– 1½	1 3 9	1 3 9	– 4 3¼	2 11 9¼
Ditto ditto	94	Repaired	– 1	– 7 10	–	–	– 4	1 11 4	1 11 4	– 5 7¾	2 4 9¾
Ditto ditto	192	ditto	– –½	– 8 –	–	–	– –½	– 8 –	– 8 –	– 1 5¼	– 17 5¼
Rifles:											
Green Tartan, Serjeants	1	Repaired, &c.	– 4	– – 4	–	–	1 –	– 1 –	– 1 –	– – 2	– 1 6
Ditto - Privates	481	ditto	– 2	4 – 2	–	–	– –½	1 – –½	1 – –½	– 3 7¼	5 3 9¾
Military Labourers:											
Blue Serge	234	Repaired	– –½	– 9 9	–	–	– –½	– 9 9	– 9 9	– 1 9	1 1 3
Royal Artillery:											
Duck, Trumpeters	1	Repaired	– 2	– – 2	–	–	1 1	– 1 1	– 1 1	– – 2¼	– 1 5¼
Ditto ditto	9	ditto	– 1	– – 9	–	–	– –½	– – 4½	– – 4½	– – 1	– 1 2½
Army Hospital Corps:											
Blue Serge, Serjeants	1	Repaired and altered	– 6	– – 6	–	–	1 3	– 1 3	– 1 3	– – 2¾	– 1 11¾
Ditto - Privates	44	ditto - ditto	– 2	– 7 4	–	–	1 –	2 4 –	2 4 –	– 7 11	2 19 3
Ditto - ditto	4	ditto - ditto	– 2	– – 8	–	–	– 8	– 2 8	– 2 8	– – 5¾	– 3 9¾
Ditto - ditto	3	ditto - ditto	– 4	– 1 –	–	–	1 3	– 3 9	– 3 9	– – 8¼	– 5 5¼
Ditto - ditto	38	ditto - ditto	– –½	– 1 7	–	–	– –½	– 1 7	– 1 7	– – 3½	– 3 5½
Of Sorts	2,858	Ripped	–	– –	–	–	– 1	11 18 2	11 18 2	2 – 4½	13 18 6½

Sundries:																												
Leggings, leather	3,218	Repaired	–	–	–	–	–	–	–	1	13	8	2	13	8	2	2	5	9¼	15	13	11¼
Plaids, Highland	532	ditto	–	½	1	2	2	–	–	6	13	6	–	13	6	–	2	5	4½	16	13	6½
Drawers, pairs	138	ditto	–	–	–	–	–	–	–	2	1	3	–	1	3	–	–	4	1¾	1	7	1¾
Ditto	184	Ripped	–	–	–	–	–	–	–	½	–	7	8	–	7	8	–	1	4¾	–	9	¾
Valises, Cavalry	1	Repaired	–	½	–	–	½	–	–	6	–	–	6	–	–	6	–	–	1	–	–	7½
Ditto	188	ditto	–	½	–	7	10	–	–	9	7	1	–	7	1	–	1	5	4½	8	14	2½
Ditto	50	ditto	–	½	–	2	1	–	–	10	2	1	8	2	1	8	–	7	6	2	11	3
Shirts, Cotton	3	ditto	–	–	–	–	–	–	–	2	–	–	6	–	–	6	–	–	1	–	–	7
Chevrons	12	Cleaned	–	–	–	–	–	–	–	3	–	3	–	–	3	–	–	–	6½	–	3	6½
Straps, Shoulder	1,043	Cleaned, &c.	–	–	–	–	–	–	–	3	13	–	9	13	–	9	2	4	5¼	15	5	2¾
Knots, ditto	9	ditto	–	–	–	–	–	–	–	3	–	2	3	–	2	3	–	–	4¾	–	2	7¾
Gaiters, pairs	90	Repaired	–	–	–	–	–	–	–	5	1	17	6	1	17	6	–	6	9	2	4	3
Belts, Cholera	1,229	ditto	–	–	–	–	–	–	–	3½	17	18	5½	17	18	5½	2	19	6¼	20	17	11¾
Ditto	1	ditto	–	–	–	–	–	–	–	1	–	–	1	–	–	1	–		–	–	–	1
Ditto	158	ditto	–	–	–	–	–	–	–	1½	–	19	9	–	19	9	–	3	6¾	1	3	3¾
Ditto	118	ditto	–	–	–	–	–	–	–	3	1	9	6	1	9	6	–	5	3½	1	14	9½
Ditto	7	ditto	–	–	–	–	–	–	–	2	–	1	2	–	1	2	–	5	2½	–	1	4½
Ditto	27	Ripped	–	–	–	–	–	–	–	½	–	1	1½	–	1	1½	–	–	2½	–	1	4
Numerals, pairs	953	Pressed	–	–	–	–	–	–	–	¼	–	19	10¼	–	19	10¼	–	3	6¾	1	3	5
Collars	2,328	ditto	–	–	–	–	–	–	–	7½ per 100	–	14	6¼	–	14	6¼	–	2	7½	–	17	1¾
Cuffs	2,700	ditto	–	–	–	–	–	–	–	7½ per 100	–	16	10½	–	16	10½	–	3	¼	–	19	10¾
Straps	2,600	ditto	–	–	–	–	–	–	–	7½ per 100	–	16	3	–	16	3	–	2	11¼	–	19	2¼
Bags, Sea, Kit	5	Repaired	–	–	–	–	–	–	–	2	–	2	6	–	2	6	–	–	5½	–	2	11½
Vests, Flannel	1	ditto	–	–	–	–	–	–	–	6	–	–	6	–	–	6	–	–	1	–	–	7
Grenades for Busbies	50	Cleaned	–	–	–	–	–	–	–	½	–	2	1	–	2	1	–	–	4½	–	2	5½
Rings for ditto	80	ditto	–	–	–	–	–	–	–	½	–	3	4	–	3	4	–	–	7¼	–	3	11¼
Shirts, Grey Flannel	14	Repaired	–	–	–	–	–	–	–	2	–	2	4	–	2	4	–	–	4¾	–	2	8¾
Ditto	6	ditto	–	–	–	–	–	–	–	5	–	2	6	–	2	6	–	–	5½	–	2	11½
Ditto	7	Re-made	–	–	–	–	–	–	–	7	–	4	1	–	4	1	–	–	8¾	–	4	9¾
Capes	1	Ripped	–	–	–	–	–	–	–	1	–	–	1	–	–	1			–	–	–	1
Chacos	1	Repaired	–	–	–	–	–	–	–	5	1	5	–	1	5	–	–	–	3¼	–	1	8¼
Ditto	5	ditto	–	–	–	–	–	–	–	6	1	6	–	1	6	–	–	1	4¼	–	8	10¼
Ditto	8	ditto	–	–	–	–	–	–	–	2	1	2	–	1	2	–	–	1	8¼	–	11	¼
Ditto	2,965	ditto	–	½	6	3	6½	–	–	3½	43	4	9½	43	4	9½	7	3	2	56	11	6
Ditto	190	Eyes sewn on	–	¾	–	11	10	–	–	1	–	15	10	–	15	10	–	2	10	1	10	6½
Ditto	383	Repaired	for		–	5	11¾	–	–	2¾	4	7	9¼	4	7	9¼	–	15	9½	5	19	6½
Ditto	1	ditto	–	–	–	–	–	–	–	3	–	–	3	–	–	3	–	–	½	–	–	3½
Ditto	50	ditto	–	–	–	–	–	–	–	1¾	–	7	3½	–	7	3½	–	1	3¾	–	8	7¼
Ditto	263	ditto	–	–	–	–	–	–	–	2	2	3	10	2	3	10	–	7	10¾	2	11	8¾
Ditto	2	ditto	–	–	–	–	–	–	–	8	–	1	4	–	1	4	–	–	3	–	1	7
Ditto	129	Set up and cleaned	–	–	–	–	–	–	–	1½	–	16	1½	–	16	1½	–	2	10¾	–	19	¼
Ditto	1	Repaired	–	–	–	–	–	–	–	4½	–	–	4½	–	–	4½	–	–	¾	–	–	5¼
Ditto	3	ditto	–	–	–	–	–	–	–	5½	–	1	4½	–	1	4½	–	–	3¼	–	1	7¾
Busbies	2	Repaired	–	–	–	–	–	–	–	2	1	2	4	–	2	4	–	–	4¾	–	2	8¾
Ditto	38	ditto	–	–	–	–	–	–	–	10	1	11	8	1	11	8	–	5	8½	1	17	4½

No. 10.—Royal Army Clothing Factory Pimlico—Statement (C.) Garments Altered during the Year 1867–8—*continued.*

Service and Description.	No. Altered.	Nature of Alteration.	Value of Material Used. Rate. s. d.	Value of Material Used. £. s. d.	Cost of Cutting, Trimmings, &c., for Alteration. Rate. s. d.	Cost of Cutting, Trimmings, &c., for Alteration. £. s. d.	Piece Work. Rate. s. d.	Piece Work. £. s. d.	Total Direct Labour. £. s. d.	Indirect Expenditure. £. s. d.	Total Expenditure. £. s. d.
Sundries—*continued.*											
Busbies	63	Repaired	–	–	–	–	– 3	– 15 9	– 15 9	– 2 10¼	– 18 7¼
Ditto	400	ditto	–	–	–	–	– 3½	5 16 8	5 16 8	1 1 –¼	6 17 8¼
Ditto	26	ditto	–	–	–	–	– 6	– 13 –	– 13 –	– 2 4	– 15 4
Ditto	1	ditto	–	–	–	–	– 2½	– – 2½	– – 2½	– – –½	– – 3
Ditto	18	ditto	–	–	–	–	– 10½	– 15 9	– 15 9	– 2 10	– 18 7
Ditto	6	ditto	–	–	–	–	– 2	– 1 –	– 1 –	– – 2	– 1 2
Bags, Busby	118	ditto	–	–	–	–	– 1½	– 14 9	– 14 9	– 2 8	– 17 5
Ditto	2	ditto	–	–	–	–	– 1	– – 2	– – 2	– – –½	– – 2½
Ditto	564	ditto	–	–	–	–	– 3	7 1 –	7 1 –	1 5 4½	8 6 4½
Caps, Forage	1	ditto	–	–	–	–	1 2	– 1 2	– 1 2	– – 2½	– 1 4½
Ditto	1	ditto	–	–	–	–	1 6	– 1 6	– 1 6	– – 3¼	– 1 9¼
Ditto	1,299	ditto	–	–	–	–	– 3	16 4 9	16 4 9	2 15 11½	19 – 8½
Ditto	883	ditto	–	–	–	–	– 1	3 13 7	3 13 7	– 13 3	4 6 10
Ditto	8	ditto	–	–	–	–	– 4	– 2 8	– 2 8	– – 5¾	– 3 1¾
Ditto	3,535	ditto	–	–	–	–	– 1	14 14 7	14 14 7	2 10 6¼	17 5 1¼
Ditto	3	ditto	–	–	–	–	– 2	– – 6	– – 6	– – 1	– – 7
Ditto	14,638	ditto	–	–	–	–	per doz. – 5½	27 19 2	27 19 2	4 10 7¾	32 9 9¾
Ditto, Bear Skin	3	ditto	–	–	–	–	– 4	– 1 –	– 1 –	– – 2	– 1 2
Ditto, Seal ditto	1	ditto	–	–	–	–	– 6	– – 6	– – 6	– – 1	– – 7
Covers, White Cotton	8,359	ditto	–	–	–	–	– –½	17 8 3½	17 8 3½	2 17 8¼	20 5 11¾
		Total £.		437 15 1¼	–	12 16 10	–	1,018 2 1¼	1,030 18 11¼	175 14 1	1,644 8 1½

Examined, *James C. Hurst,*
Accountant, and Auditor to Manufacturing Departments.

No. 10.—Royal Army Clothing Factory, Pimlico—*continued.*

STATEMENT (D.)—Garments Issued Cut Out, during the Year 1867-8.

Service and Description.	Number of Garments.	Cost of Material. Rate. s. d.	Cost of Material. £. s. d.	Direct Labour, Cutting. Rate. s. d.	Direct Labour, Cutting. £. s. d.	Indirect Expenditure. £. s. d.	Total Expenditure. £. s. d.	Rate per Garment. £. s. d.
Tunics:								
Infantry:								
Staff Serjeants	18	41 10	37 13 –	– 8	– 12 –	– 2 1¾	38 7 1¾	2 2 7 5/12
Band Masters	3	40 –	6 – –	– 8	– 2 –	– – 4½	6 2 4½	2 – 9½
„ Serjeants	1	41 1	2 1 1	– 8	– – 8	– – 1¼	2 1 10¼	2 1 10¼
Serjeants	127	17 1¾	108 17 6¼	– 6½	3 8 9½	– 12 4¾	112 18 8½	– 17 9 5/12
Band	47	15 7½	36 14 4½	– 6¾	1 5 5½	– 4 6¾	38 4 4¾	– 16 3 1/7
Drummers	97	18 9	90 18 9	– 4½	1 16 4½	– 6 6½	93 1 8	– 19 2 1/3
Privates	821	15 4¼	630 5 9¼	– 3½	11 19 5½	2 3 1½	644 8 4¼	– 15 8 3/8
Rifles:								
Staff Serjeants	9	32 11	14 16 3	– 8	– 6 –	– 1 –¾	15 3 3¾	1 13 8 1/3
Serjeants	35	18 –½	31 11 5½	– 6½	– 18 11½	– 3 5	32 13 10	– 18 8 1/6
Band	60	17 11½	53 17 6	– 6½	1 12 6	– 5 10¼	55 15 10¼	– 18 7¼
Buglers	46	17 11	41 4 2	– 6½	1 4 11	– 4 5¾	42 13 6¾	– 18 6 2/3
Privates	189	17 5	164 11 9	– 3½	2 15 1½	– 9 11½	167 16 9¾	– 17 9⅛
Canadian Rifles:								
Staff Serjeants	4	32 11	6 11 8	– 8	– 2 8	– – 5¾	6 14 9¾	1 13 8½
Serjeants	6	18 –½	5 8 3	– 6½	– 3 3	– – 7	5 12 1	– 18 8 1/6
Band	20	17 11½	17 19 2	– 6½	– 10 10	– 1 11¼	18 11 11¼	– 18 7¼
Buglers	5	17 11	4 9 7	– 6½	– 2 8½	– – 6	4 12 9½	– 18 6¾
Privates	95	17 5	82 14 7	– 3½	1 7 8½	– 4 11¾	84 7 3¼	– 17 9⅝
Highland Line:								
Staff Serjeants	6	45 2¼	13 11 1½	– 8½	– 4 3	– – 9¼	13 16 1¾	2 6 –½
Serjeants	32	18 6¾	29 14 –	– 7	– 18 8	– 3 4¼	30 16 –¼	– 19 3
Band	40	16 10¼	33 14 2	– 7	1 3 4	– 4 2½	35 1 8½	– 17 6½
Drummers	19	20 –	19 – –	– 4½	– 7 1½	– 1 3¼	19 8 4¾	1 – 5¼
Pipers	5	15 6	3 17 6	– 7	– 2 11	– – 6¼	4 – 11¼	– 16 2¼
Privates	223	16 5	183 – 11	– 4	3 14 4	– 13 4¾	187 8 7¾	– 16 9 5/7
Commissariat Staff Corps:								
Staff Serjeants	8	41 9	16 14 –	– 8	– 5 4	– – 11½	17 – 3½	2 2 6 2/5
Serjeants	4	25 5	5 1 8	– 6½	– 2 2	– – 4¾	5 4 2¾	1 6 –¾
Buglers	7	19 3	6 14 9	– 3½	– 2 –½	– – 4¼	6 17 1¾	– 19 7¼
Privates	10	17 2	8 11 8	– 3½	– 2 11	– – 6¼	8 15 1¼	– 17 6⅛
Artillery Volunteers:								
Staff Serjeants	1	38 –	1 18 –	– 10	– – 10	– – 1¾	1 18 11¾	1 18 11¾
Serjeants	2	27 –	2 14 –	– 8	– 1 4	– – 2¾	2 15 6¾	1 7 9⅜
Orderly Room Clerk	1	27 –	1 7 –	– 8	– – 8	– – 1½	1 7 9½	1 7 9½
Corporals	1	23 6	1 3 6	– 6	– – 6	– – 1	1 4 1	1 4 1
Bombardiers	3	22 9	3 8 3	– 6	– 1 6	– – 3¼	3 10 –¼	1 3 4⅛
Privates and Gunners	127	20 –	127 – –	– 6	3 3 6	– 11 5¼	130 14 11¼	1 – 7 1/12
Rifle Volunteers:								
Staff Serjeants	3	33 –	4 19 –	– 10	– 2 6	– – 5½	5 1 11½	1 14 –
Band	14	18 –	12 12 –	– 8	– 9 4	– 1 8	13 3 –	– 18 9½
Serjeants	4	18 6	3 14 –	– 8	– 2 8	– – 5¾	3 17 1¾	– 19 3½
Buglers	2	18 3	1 16 6	– 8	– 1 4	– – 3	1 18 1	– 19 –½
Privates	306	17 6	267 15 –	– 6	7 13 –	1 7 6½	276 15 6½	– 18 1 1/13

No. 10.—Royal Army Clothing Factory, Pimlico—Statement (D.) Garments Issued Cut Out, &c.—*continued.*

SERVICE AND DESCRIPTION.	Number of Garments.	Cost of Material. Rate. s. d.	Cost of Material. £. s. d.	Direct Labour, Cutting. Rate. s. d.	Direct Labour, Cutting. £. s. d.	Indirect Expenditure. £. s. d.	Total Expenditure. £. s. d.	Rate per Garment. £. s. d.
Tunics—*continued.*								
Royal Artillery:								
Gunners or Privates - -	*16,711	–	- -	– 3½	243 14 –½	43 17 3¾	287 11 4¼	–
Cape Mounted Rifles:								
Staff - - - -	5	38 4	9 11 8	– 8	– 3 4	– – 7¼	9 15 7¼	1 19 1¼
Serjeants - - - -	5	29 3½	7 6 5½	– 6½	– 2 8½	– – 6	7 9 8	1 9 11½
Trumpeters - - -	2	16 8	1 13 4	– 3½	– – 7	– – 1¼	1 14 –¼	– 17 –¼
Privates - - - -	33	16 5¾	27 3 9¾	– 3½	– 9 7½	– 1 8¾	27 15 2	– 16 9¾
Yeomanry Cavalry:								
Privates - - - -	5	21 11	5 9 7	– 8	– 3 4	– – 7¼	5 13 6¼	1 2 8⅝
Frock Coats:								
Librarians - - -	1	25 3¾	1 5 3¾	– 6½	– – 6½	– – 1	1 5 11¼	1 5 11¼
Jackets:								
Yeomanry Cavalry:								
Serjeant Majors - -	1	25 3	1 5 3	– 5	– – 5	– – 1	1 5 9	1 5 9
Farrier Majors - - -	1	24 1	1 4 1	– 5	– – 5	– – –¾	1 4 6¾	1 4 6¾
Serjeants - - - -	4	24 1	4 16 4	– 4	– 1 4	– – 3½	4 17 11½	1 4 6
Corporals - - -	3	14 1	2 2 3	– 3	– – 9	– – 1½	2 3 1½	– 14 4
Trumpeters - - -	1	14 1	– 14 1	– 3	– – 3	– – –½	– 14 4½	– 14 4½
Privates - - - -	48	14 1	33 16 –	– 3	– 12 –	– 2 2	34 10 2	– 14 4½
Infantry:								
Staff - - - -	8	25 3	10 2 –	– 3½	– 2 4	– – 5	10 4 9	1 5 7⅛
Band Serjeants - -	1	24 5	1 4 5	– 3½	– – 3½	– – –½	1 4 9	1 4 9
Serjeants - - - -	30	11 4	17 – –	– 2½	– 6 3	– 1 1½	17 7 4½	– 11 6⅛
Band - - - -	20	9 4½	9 7 6	– 2½	– 4 2	– – 9	9 12 5	– 9 7½
Volunteer Artillery:								
Staff Serjeants - - -	3	32 –	4 16 –	– 5	– 1 3	– – 2¾	4 17 5¾	1 12 6
Privates or Gunners -	61	16 6	50 6 6	– 3	– 15 3	– 2 9	51 4 6	– 16 9½
Highlanders:								
Staff Serjeants - - -	8	23 10	9 10 8	– 3½	– 2 4	– – 5	9 13 5	1 4 2⅛
Serjeants - - - -	22	10 2	11 3 8	– 2½	– 4 7	– – 9¾	11 9 –¾	– 10 5
Band - - - -	20	9 8	9 13 4	– 2½	– 4 2	– – 9	9 18 3	– 9 11
Privates - - - -	222	5 9½	64 5 9	– 2	1 17 –	– 6 8	66 9 5	– 5 11⅛
Royal Artillery:								
Gunners - - - -	*4,450	–	- -	– 2½	46 7 1	8 6 10¼	54 13 11¼	–
West India Regiments:								
Band Masters - - -	1	27 8¾	1 7 8¾	– 3½	– – 3½	– – –½	1 8 –¾	1 8 –¾
Cape Mounted Rifles:								
Staff Serjeants - - -	5	21 5	5 7 1	– 3½	– 1 5½	– – 3¾	5 8 10¼	1 1 9¼
Serjeants - - - -	5	14 8½	3 13 6½	– 2½	– 1 –½	– – 2¼	3 14 9¼	– 14 11½
Trumpeters - - -	2	13 –½	1 6 1	– 2½	– – 5	– – 1	1 6 7	– 13 3½
Privates - - - -	33	13 –½	21 10 4½	– 2	– 5 6	– – 11¾	21 16 10¼	– 13 2½

* Cut out for Clothing Factory, Woolwich; the Materials not being debited to Factory, Pimlico.

No. 10.—Royal Army Clothing Factory, Pimlico—Statement (D.) Garments Issued Cut Out, &c.—*continued.*

SERVICE AND DESCRIPTION.	Number of Garments.	Cost of Material. Rate. s. d.	Cost of Material. £ s. d.	Direct Labour, Cutting. Rate. s. d.	Direct Labour, Cutting. £. s. d.	Indirect Expenditure. £. s. d.	Total Expenditure. £. s. d.	Rate per Garment. £. s. d.
Waistcoats:								
West India Regiments:								
Staff Serjeants	4	27 7	5 10 4	– 3½	– 1 2	– – 2½	5 11 8½	1 7 11⅓
Band Masters	1	26 7¼	1 6 7¼	– 3½	– – 3½	– – –½	1 6 11¼	1 6 11¼
Serjeants	1	6 6½	– 6 6½	– 2½	– – 2½	– – –½	– 6 9½	– 6 9½
Trousers, pairs:								
Line:								
Staff, Cloth	125	17 7	109 17 11	– 3½	1 16 5¼	– 6 6¾	112 – 11¼	– 17 11⅛
Serjeants, Cloth	748	12 –¼	449 11 7	– 2½	7 15 10	1 8 –¾	458 15 5¾	– 12 3⅕
Privates „	2,937	10 2¼	1,496 – 8¼	– 2	24 9 6	4 8 1½	1,524 18 3¾	– 10 4⅗
Staff, Black Tartan	119	12 6	74 7 6	– 3½	1 14 8½	– 6 3	76 8 5½	– 12 10⅛
Serjeants „	639	9 –	287 11 –	– 2	5 6 6	– 19 2	293 16 8	– 9 2⅓
Privates „	2,811	8 10½	1,247 7 7½	– 2	23 8 6	4 4 4	1,275 – 5½	– 9 –⅞
„ „	½	4 5¼	– 4 5¼	– 1	– – 1	– – –¼	– 4 6½	– 4 6½
Other Ranks, Blue Serge	58	6 6½	18 19 5	– 2	– 9 8	– 1 9	19 10 10	– 6 8⅞
Rifles:								
Staff, Cloth	9	16 4½	7 7 4½	– 3½	– 2 7½	– – 5¾	7 10 5¾	– 16 8⅜
Serjeants, Cloth	88	11 11	52 8 8	– 2½	– 18 4	– 3 3½	53 10 3½	– 12 2
Privates „	261	9 8¾	126 19 3¾	– 2	2 3 6	– 7 9	129 10 6¾	– 9 11 1/10
Staff, Tartan	28	11 9½	16 10 2	– 3½	– 8 2	– 1 5½	16 19 9½	– 12 1⅔
Other Ranks, Tartan	110	8 4½	46 1 3	– 2	– 18 4	– 3 3½	47 2 10½	– 8 6⅚
Commissariat Staff Corps:								
Staff, Cloth	10	16 4½	8 3 9	– 3½	– 2 11	– – 7½	8 7 3½	– 16 8¾
Serjeants, Cloth	4	16 4½	3 5 5	– 2½	– – 10	– – 1¾	3 6 4¾	– 16 7¼
Privates „	17	13 11¾	11 17 7¾	– 2	– 2 10	– – 6	12 – 11¾	– 14 2⅛
Rifle Volunteers:								
Staff, Cloth	3	17 –	2 11 –	– 4	– 1 –	– – 2¼	2 12 2¼	– 17 4¾
Serjeants, Cloth	2	12 3	1 4 6	– 3	– – 6	– – 1	1 5 1	– 12 6½
Privates „	363	12 3	222 6 9	– 2	3 – 6	– 10 10¼	225 18 1¼	– 12 5⅜
Artillery Volunteers:								
Staff, Cloth	1	20 2	1 – 2	– 4	– – 4	– – –¾	1 – 6¾	1 – 6¾
Serjeants, Cloth	3	16 1	2 8 3	– 3	– – 9	– – 1½	2 9 1½	– 16 4½
Privates „	136	16 1	109 7 4	– 2	1 2 8	– 4 1	110 14 1	– 16 3⅖
Cape Mounted Rifles:								
Staff	10	23 4¾	11 13 11½	– 6	– 5 –	– – 11¼	11 19 10¾	1 3 11⅞
Other Ranks	80	20 5	81 13 4	– 5	1 13 4	– 6 –	83 12 8	1 – 10⅞
Royal Artillery:								
Privates or Gunners	*13,930	–	– –	– 2½	145 2 1	26 2 4	171 4 5	—
Army Hospital Corps:								
Staff, Blue Serge	2	13 3½	1 6 7	– 3	– – 6	– – 1	1 7 2	– 13 7
Guards:								
Staff Serjeants	1	18 4	– 18 4	– 6	– – 6	– – 1	– 18 11	– 18 11
Librarians:								
Cloth	1	12 –¼	– 12 –¼	– 2½	– – 2½	– – –½	– 12 3¼	– 12 3¼
Royal Engineers:								
Privates	*1,000	–	– –	– 2	8 6 8	1 10 –	9 16 8	—

* Cut out for Clothing Factory, Woolwich; the Materials not being debited to Factory, Pimlico.

No. 10.—Royal Army Clothing Factory, Pimlico—Statement (D.) Garments Issued Cut Out, &c.—*continued.*

SERVICE AND DESCRIPTION.	Number of Garments.	Cost of Material. Rate. s. d.	Cost of Material. £. s. d.	Direct Labour, Cutting. Rate. s. d.	Direct Labour, Cutting. £. s. d.	Indirect Expenditure. £. s. d.	Total Expenditure. £. s. d.	Rate per Garment. £. s. d.
Breeches:								
West India Regiments:								
Staff, Blue Serge - -	—	—	—	—	—	—	—	—
Other Ranks, Blue Serge -	762	7 5¼	283 7 4½	– 1⅓	4 15 3	– 17 1½	288 19 9	– 7 [illegible]
Overalls:								
Royal Artillery:								
Privates or Gunners -	*3,000	–	– –	– 2¼	28 2 6	5 1 2¾	33 3 8¾	–
Military Train:								
Privates - - - -	*1,000	–	– –	– 5	20 16 8	3 15 –	24 11 8	–
Yeomanry Cavalry - -	12	13 5	8 1 –	– 5	– 5 –	– – 11¼	8 6 11¼	– 13 11
Great Coats:								
Volunteers:								
Staff - - -	7	35 1	12 5 7	– 9	– 5 3	– – 11½	12 11 9½	1 15 11½
Other Ranks - - -	3	24 11½	3 14 10½	– 6	– 1 6	– – 3¼	3 16 7¾	1 5 6[illegible]
Royal Artillery:								
Other Ranks - - -	*6,403	–	– –	– 4	106 14 4	19 4 2	125 18 6	–
Cloaks:								
Royal Artillery:								
Other Ranks - - -	*1,000	–	– –	– 10	41 13 4	7 10 –	49 3 4	–
Yeomanry Cavalry:								
Other Ranks - - -	3	47 9	7 3 3	– 10	– 2 6	– – 5½	7 6 2½	2 8 9
Capes:								
Royal Artillery:								
Other Ranks - - -	*1,000	–	– –	– 1½	6 5 –	1 2 6	7 7 6	–
Frocks:								
Rifles:								
Staff, Green Serge - -	12	8 9½	5 5 6	– 4	– 4 –	– – 8¾	5 10 2¾	– 9 2¼
Serjeants „ „ - -	6	7 7	2 5 6	– 2½	– 1 3	– – 2½	2 6 11½	– 7 9[illegible]
Privates „ „ - -	94	7 1½	33 9 9	– 2½	– 19 7	– 3 6¼	34 12 10¼	– 7 4[illegible]
Line:								
Staff, Red Serge - -	18	12 5¼	11 3 10½	– 4½	– 6 9	– 1 2½	11 11 10	– 12 10[illegible]
Serjeants, Red Serge -	12	7 6	4 10 –	– 2½	– 2 6	– – 5½	4 12 11½	– 7 9
Privates „ - -	134	7 2	48 – 4	– 2½	1 7 11	– 5 –¼	49 13 3¼	– 7 4[illegible]
Shirts:								
General Service:								
Grey Flannel - - -	1,550	4 11	381 – 10	– –½	3 4 7	– 11 7½	384 17 –½	– 4 11[illegible]
White Cotton - - -	6,150	2 1¼	647 – 7½	– –½	12 16 3	2 6 1½	662 3 –	– 2 1[illegible]
Striped „ - - -	400	2 3	45 – –	– –½	– 16 8	– 3 –	45 19 8	– 2 9

* Cut out for Clothing Factory, Woolwich; the Materials not being debited to Factory, Pimlico.

No. 10.—Royal Army Clothing Factory, Pimlico—Statement (D.) Garments Issued Cut Out, &c.—*continued.*

Service and Description.	Number of Garments.	Cost of Material. Rate. s. d.	Cost of Material. £. s. d.	Direct Labour, Cutting. Rate. s. d.	Direct Labour, Cutting. £. s. d.	Indirect Expenditure. £. s. d.	Total Expenditure. £. s. d.	Rate per Garment. £. s. d.
Sundries;								
Facings, Tunic, Serjeants, sets.	3	1 10	– 5 6	– –⅛	– – –½	– – –	– 5 6½	– 1 10
Facings, Tunic, other Ranks, sets.	213	1 9	18 12 9	– –⅛	– 2 2½	– – 4¾	18 15 4¼	– 1 9⅐
Facings, Jacket, other Ranks, sets.	7,148	– 10	297 16 8	– –⅛	3 14 5½	– 13 4¾	302 4 6¼	– – 10⅐
Linings for Collars and Straps.	200	– 3	2 10 –	– –⅛	– 2 1	– – 4½	2 12 5½	– – 3¼
Stripes, Cloth, for Trowsers, Royal Artillery.	*2,000	–	– –	– –⅛	1 – 10	– 3 9	1 4 7	—
Fittings for Trowsers, Royal Artillery.	*2,000	–	– –	– 1	8 6 8	1 10 –	9 16 8	—
Cuffs and Collars for Great Coats.	44	– 3½	– 12 10	– –¼	– – 11	– – 2	– 13 11	– – 3¾
Leg of Trowsers, Serjeants	1	2 6	– 2 6	– 1	– – 1	– – –¼	– 2 7¼	– 2 7¼
Foreparts for Serge Frocks	48	2 10	6 16 –	– 1	– 4 –	– – 9	7 – 9	– 2 11⅕
Collars for Tunic	2	– 2½	– – 5	– –⅛	– – –¼	– –	– – 5¼	– – 2⅝
Foreparts for Tunic	2	4 –	– 8 –	– 1½	– – 3	– – –½	– 8 3½	– 4 1¾
Chevrons, 2 bars	170	– 2	1 8 4	– –⅛	– 1 9¼	– – 3¾	1 10 5	– – 2⅐
„ 3 bars	79	– 3	– 19 9	– –⅛	– – 9¾	– – 1¾	1 – 8½	– – 3⅐
Badges, Good Conduct, 1 bar	403	– –½	– 16 9½	– –⅛	– 4 2½	– – 9	1 1 9	– – –⅔
„ „ 2 bars	281	– 1	1 3 5	– –⅛	– 2 11¼	– – 6¼	1 6 10½	– – 1⅐
„ „ 3 bars	71	– 1½	– 8 10½	– –⅛	– – 8¾	– – 1½	– 9 8¾	– – 1⅝
„ „ 4 bars	50	– 2	– 8 4	– –⅛	– – 6¼	– – 1	– 8 11¼	– – 2⅐
„ „ 5 bars	18	– 2½	– 2 8½	– –⅛	– – 1½	– – –½	– 2 10½	– – 2⅝
Back for Tunic, Privates	1	2 –	– 2 –	– –¼	– – –¼	– –	– 2 –¼	– 2 –¼
Bands, Cap, Leather and Staying.	35	– 2½	– 7 3½	– –¼	– – 8¾	– – 1½	– 8 1¾	– – 2¾
Figures, Cloth	288,472	Per doz. – 1	100 3 3¼	Per gross. – 2½	20 17 4¼	3 15 1¾	124 15 9¼	Per doz. – – 1¼
Grenades, Cloth	11,288	Per doz. – 1½	5 17 7	Per gross. – 2½	– 16 4	– 2 11¼	6 16 10¼	Per doz. – – 1¾
Initials, Cloth	3,728	Per doz. – 1¼	1 12 4½	Per gross. – 2½	– 5 4¼	– – 11½	1 18 8¾	Per doz. – – 1½
Letters, Cloth	8,220	Per doz. – 1¼	3 11 4¼	Per gross. – 2½	– 11 10¾	– 2 1¾	4 5 4¾	Per doz. – – 1½
Letters, Cloth, C. R.	66	Per doz. – 2½	– 1 1¾	Per gross. – 2½	– – 1¼	– – –½	– 1 3½	Per doz. – – 2¾
Initials. Cloth, C. S. C.	158	Per doz. – 3¾	– 4 1	Per gross. – 2½	– – 2¾	– – –½	– 4 4¼	Per doz. – – 4
Leathers, Head	343	– 2	2 17 2	– –⅛	– 3 7	– – 7¾	3 1 4¾	– – 2⅐
Numerals, Cloth	23,030	Per doz. – 1	7 19 11¼	Per gross. – 2½	1 13 4	– 6 –	9 19 3¼	Per doz. – – 1¼
Leathers, Cap, Black Roan	269	– 3¾	4 4 –¾	– –⅛	– 2 9½	– – 6	4 7 4¼	– – 4
Peaks	114	– 3½	1 13 3	– –⅛	– 1 2¼	– – 2½	1 14 7¾	– – 3⅝
Peaks, Kepi, Staff	7	– 5¼	– 3 –¾	– –⅛	– – –¾	– – –¼	– 3 1¾	– – 5½
„ other Ranks	543	– 3½	7 18 4½	– –⅛	– 5 8	– 1 –	8 5 –½	– – 3⅔
Patches, Pioneers, Badges	77	Per doz. – 2	– 1 1	Per gross. – 2½	– – 1¼	– – –¼	– 1 2½	Per doz. – – 2½
Initials, Cloth, A. H. C.	50	Per doz. – 3¾	– 1 3½	Per gross. – 2½	– – –¾	– – –¼	– 1 4½	Per doz. – – 3½
Peaks, Staff	35	– 5¼	– 15 3¾	– –⅛	– – 4½	– – –¾	– 15 9	– – 5½
Linings for Forage Caps	541	– 2½	5 12 8½	– –⅛	– 5 7¾	– 1 –	5 19 4¼	– – 2⅔
Straps, chin	350	– ¾	1 1 10½	– –⅛	– 3 7¾	– – 8	1 6 2¼	– – –⅞
Stays, Button, Leather	42,000	Per doz. – 2½	36 9 2	Per gross. – 2½	3 – 9¼	– 10 11¼	40 – 10½	Per doz. – – 2⅝
Tabs, Cloth, for Pattern Room	5,500	Per doz. – 2	3 16 4¾	Per gross. – 2½	– 7 11½	– 1 5	4 5 9¼	Per doz. – – 2¼
Total £.			8,809 18 4¼	–	845 7 7½	152 3 4	9,807 9 3¾	

* Cut out for Clothing Factory, Woolwich, the Materials not being debited to Factory, Pimlico.

Examined,

James C. Hurst,
Accountant, and Auditor to Manufacturing Departments.

No. 10.—Royal Army Clothing Factory, Pimlico—*continued.*

STATEMENT (E.)—Remains of Semi-Manufactured Goods, 31 March 1868.

Service and Description.	Number of Garments.	Cost of Material. Rate. s. d.	Cost of Material. £. s. d.	Direct Labour, Cutting. Rate. s. d.	Direct Labour, Cutting. £. s. d.	Indirect Expenditure. £. s. d.	Total Expenditure. £. s. d.	Rate per Garment. £. s. d.
Tunics:								
Foot Guards:								
Serjeant Majors	6	127 4	38 4 –	1 –	– 6 –	– 1 1	38 11 1	6 8 6 1/3
Quartermaster Serjeants	6	92 10½	27 17 3	1 –	– 6 –	– 1 1	28 4 4	4 14 –¼
Rifle Instructors	6	88 6	26 11 –	1 –	– 6 –	– 1 1	26 18 1	4 9 8⅙
Regimental Clerks	3	85 –	12 15 –	1 –	– 3 –	– – 6½	12 18 6½	4 6 2⅙
Drum Majors	6	124 –	37 4 –	1 –	– 6 –	– 1 1	37 11 1	6 5 2⅙
Band Masters	2	134 6	13 9 –	1 –	– 2 –	– – 4¼	13 11 4¼	6 15 8⅛
„ Serjeants	2	92 –	9 4 –	– 9	– 1 6	– – 3¼	9 5 9¼	4 12 10⅝
Pipe Majors	2	74 4	7 8 8	1 –	– 2 –	– – 4¼	7 11 –¼	3 15 6⅞
Drill Serjeants	28	66 6	93 2 –	– 9	1 1 –	– 3 9¼	94 6 9¼	3 7 4½
Serjeants	212	56 –	593 12 –	– 9	7 19 –	1 8 7½	602 19 7½	2 16 10½
Time Beaters	3	113 6	17 – 6	– 9	– 2 3	– – 4¾	17 3 1¾	5 14 4½
Band	74	75 6	279 7 –	– 9	2 15 6	– 10 –	282 12 6	3 16 4⅜
Undress, 1st Class	36	35 5	63 15 –	1 –	1 16 –	– 6 5¾	65 17 5¾	1 16 7⅛
„ 2nd Class	3	33 2	4 19 6	– 9	– 2 3	– – 4¾	5 2 1¾	1 14 –⅓
Pipers	10	25 –	12 10 –	– 6	– 5 –	– – 11	12 15 11	1 5 7⅚
Privates	1,784	17 8	1,575 17 4	– 6	44 12 –	8 – 6¾	1,628 9 10¾	– 18 3 1/12
Infantry, Line:								
Staff Serjeants	36	41 10	75 6 –	– 8	1 4 –	– 4 3¾	76 14 3¾	2 2 7 5/12
Serjeants	367	17 1¾	314 12 6¼	– 6½	9 18 9½	1 15 9½	326 7 1¼	– 17 9⅜
Band	83	15 7½	64 16 10½	– 6½	2 4 11½	– 8 1	67 9 11	– 16 8
Drummers	197	18 9	184 13 9	– 4½	3 13 10½	– 13 3½	189 – 11	– 19 2⅔
Privates	2,517	15 4¼	1,932 6 5¼	– 3½	36 14 1½	6 12 1¾	1,975 12 8½	– 15 8⅜
Highlanders:								
Privates	157	16 5	128 17 5	– 4	2 12 4	– 9 5	131 19 2	– 16 9¼
Rifles:								
Staff Serjeants	6	32 11	9 17 6	– 8	– 4 –	– – 8½	10 2 2½	1 13 8½
Serjeants	46	18 –½	41 9 11	– 6½	1 4 11	– 4 5¾	42 19 3¾	– 18 8⅞
Band	40	17 11½	35 18 4	– 6½	1 1 8	– 3 10¾	37 3 10¾	– 18 7⅞
Buglers	21	17 11	18 16 3	– 6½	– 11 4½	– 2 –½	19 9 8	– 18 6⅜
Privates	423	17 5	368 7 3	– 3½	6 3 4½	1 2 3½	375 12 11	– 17 9⅞
Commissariat Staff Corps:								
Staff Serjeants	7	41 9	14 12 3	– 8	– 4 8	– – 10	14 17 9	2 2 6⅜
Serjeants	40	25 5	50 16 8	– 6½	1 1 8	– 3 10¾	52 2 2¾	1 6 –⅜
Buglers	2	19 3	1 18 6	– 3½	– – 7	– – 1¼	1 19 2¼	– 19 7⅞
Privates	337	17 2	289 5 2	– 3½	4 18 3½	– 17 8¼	295 1 1¾	– 17 6⅜
Pekin:								
Inspectors	1	144 7	7 4 7	– 8½	– – 8½	– – 1½	7 5 5	7 5 5
Serjeants	1	45 10¾	2 5 10¾	– 7½	– – 7½	– – 1½	2 6 7¾	2 6 7¾
Constables	12	25 7	15 7 –	– 6½	– 6 6	– 1 1	15 14 7	1 6 [illegible]
Jackets:								
Foot Guards:								
Pipe Majors	2	29 5½	2 18 11	– 8	– 1 4	– – 2¾	3 – 5¾	1 10 [illegible]
Serjeants	33	11 4½	18 15 4½	– 6	– 16 6	– 2 11¾	19 14 10¼	– 11 1[illegible]
Pipers	5	10 6	2 12 6	– 6	– 2 6	– – 5½	2 15 5½	– 11 [illegible]
Infantry, Line:								
Staff Serjeants	36	25 3	45 9 –	– 3½	– 10 6	– 1 10¾	46 1 4¾	1 5 7[illegible]
Serjeants	17	11 4	9 12 8	– 2½	– 3 6½	– – 7¾	9 16 10¼	– 11 6[illegible]
Band	48	9 4½	22 10 –	– 2½	– 10 –	– 1 9½	23 1 9½	– 9 7[illegible]
Privates	1,511	9 9¼	738 3 8¾	– 2	12 11 10	2 5 4¼	753 – 11	– 9 1[illegible]

No. 10.—Royal Army Clothing Factory, Pimlico—Statement (E.) Remains of Semi-Manufactured Goods, &c.—*cont^d.*

SERVICE AND DESCRIPTION.	Number of Garments.	Cost of Material. Rate. s. d.	Cost of Material. £. s. d.	Direct Labour, Cutting. Rate. s. d.	Direct Labour, Cutting. £. s. d.	Indirect Expenditure. £. s. d.	Total Expenditure. £. s. d.	Rate per Garment. £. s. d.
Jackets—continued.								
Rifles:								
Staff Serjeants - - -	1	21 9	1 1 9	– 3½	– – 3½	– – –½	1 2 1	1 2 1
Serjeants - - - -	2	11 6¾	1 3 1½	– 2½	– – 5	– – –¾	1 3 7¼	– 11 9⅝
Privates - - - -	54	10 10¾	29 8 4½	– 2	– 9 –	– 1 7½	29 19 –	– 11 1⅙
Highlanders:								
Privates - - - -	150	5 9½	43 8 9	– 2	1 5 –	– 4 6¼	44 18 3¼	– 5 11⅞
Trowsers:								
Foot Guards:								
Staff, Cloth - - -	6	18 4	5 10 –	– 6	– 3 –	– – 6½	5 13 6½	– 18 11 1/9
Serjeants, ditto - -	28	13 2	18 8 8	– 4	– 9 4	– 1 8½	18 19 8½	– 13 6⅔
Privates, ditto - - -	4	10 7¼	2 2 5	– 3	– 1 –	– – 2	2 3 7	– 10 10¾
Infantry, Line:								
Staff, Cloth - - -	1	17 7	– 17 7	– 3½	– – 3½	– – –½	– 17 11	– 17 11
Serjeants, ditto - -	127	12 –¼	76 6 7¾	– 2½	1 6 5½	– 4 9½	77 17 10¾	– 12 3⅕
Privates, ditto - - -	285	10 2¼	145 3 5¼	– 2	2 7 6	– 8 6¼	147 19 5⅓	– 10 4 6/16
Staff, Black Tartan - -	2	12 6	1 5 –	– 3½	– – 7	– – 1¼	1 5 8¼	– 12 10⅛
Other Ranks, ditto, ditto -	450	8 10½	199 13 9	– 2	3 15 –	– 13 6¼	204 2 3¼	– 9 –⅞
Great Coats:								
Infantry, Line:								
Staff Serjeants - - -	8	35 1	14 – 8	1 –	– 8 –	– 1 5¼	14 10 1¼	1 16 3⅛
Sandhurst College:								
Other Ranks - - -	16	33 3	26 12 –	– 6	– 8 –	– 1 5¼	27 1 5¼	1 13 10
Sundries:								
Gymnasium:								
Shirts, Red - - -	74	6 1¼	22 11 8½	– 2	– 12 4	– 2 2½	23 6 3	– 6 3⅗
Cavalry:								
Cloaks - - - -	311	39 3½	610 19 8½	– 10	12 19 2	2 6 7¾	626 5 6¼	2 – 3⅓
Capes - - - -	118	17 4	102 5 4	– 1	– 9 10	– 1 9¼	102 16 11¼	– 17 5⅙
Infantry:								
Frocks, Red Serge, other Ranks.	99	7 2	35 9 6	– 2½	1 – 7½	– 3 8½	36 13 10	– 7 4⅞
Frocks, White Duck -	302	3 6	52 17 –	– 2½	3 2 11	– 11 4	56 11 3	– 3 9
Trowsers, ditto, ditto -	382	3 –	57 6 –	– 2	3 3 8	– 11 5½	61 1 1½	– 3 2⅜
General Service:								
Vests, White Flannel -	150	3 1½	23 8 9	– –½	– 6 3	– 1 1½	23 16 1½	– 3 2 1/13
Drawers, ditto, ditto -	4	3 –	– 12 –	– 1	– – 4	– – –¾	– 12 4¾	– 3 1⅛
Boat's Crew;								
Cloaks - - - -	1	33 4	1 13 4	– 6	– – 6	– – 1	1 13 11	1 13 11
General Service:				Per doz.				
Towels - - - -	898	– 8½	31 16 1	– 1	– 6 2¾	– 1 1½	32 3 5¼	– – 8⅝
Total - - - £.			8,713 12 4	–	180 3 10¾	32 8 8½	8,926 4 11¼	

Examined,

James C. Hurst,
Accountant, and Auditor to Manufacturing Departments.

— No. 11. —

ROYAL CLOTHING FACTORY, WOOLWICH.

(A.)—BALANCE SHEET of the Royal Army Clothing Factory, Woolwich, 1867-8.

Dr.

	£. s. d.	£. s. d.
To Value of Buildings	6,008 16 4	
„ Machinery	300 16 3	
„ Tools and Implements	161 6 9	
„ Miscellaneous Stores	441 19 11	
„ Semi-manufactured Articles in Stock, 1st April 1867	1,208 13 –	
		8,121 12 3
To Purchases during the Year:		
Buildings	529 9 5	
Machinery	464 10 –	
Tools and Implements	26 9 7	
		1,020 9 –
To Repairs to Buildings	- -	39 9 10
„ „ Machinery	- -	8 – –
To Stores received from Storekeeper during the Year, viz.:		
Material	106,794 7 7	
Semi-manufactured Articles	905 11 10	
Miscellaneous Stores	131 9 11	
		107,831 9 4
To Charges and Expenses:		
Cost of Inspecting Material	300 – –	
Wages	18,007 8 4	
Cutting	671 13 1	
Military Pay of Manager	170 16 –	
Salaries	485 3 6	
Police	18 6 –	
Lodging Allowance	36 12 –	
Water	5 10 –	
Stationery	32 8 11	
Fuel	63 18 7	
Gas and Repairs to Fittings	334 3 9	
Rental Value of Non-Commissioned Officers' Quarters	32 – –	
Postage	– 16 2	
Interest on Invested Capital	284 5 1	
„ Working Capital	210 – –	
		20,653 1 5
	£.	137,674 1 10

Cr.

	£. s. d.	£. s. d.
By Balance:		
Buildings	6,008 16 4	
Deduct—Depreciation at 5 per cent.	300 8 10	
	5,708 7 6	
Add—Additions during the Year, *per contra*	529 9 5	
		6,237 16 1
Machinery	300 16 3	
Tools and Implements	161 6 9	
	462 3 –	
Deduct—Depreciation at 10 per cent.	46 4 3	
	415 18 9	
Add—Additions during the Year, *per contra*:		
Machinery	464 10 –	
Tools and Implements	26 9 7	
		906 18 4
Miscellaneous Stores in hand, 31st March 1868	- -	501 11 9
By Miscellaneous Stores issued to the Storekeeper during the Year	- -	11 13 11
By Production Account:		
For Garments Manufactured during the Year, as per Statement (B.)	115,472 2 2	
For Alterations and Repairs performed during the Year, as per Statement (C.)	586 1 2½	
For Garments issued in Material, to be made up at Regiments, as per Statement (D.)	11,786 5 1	
For Semi-manufactured Articles received from Storekeeper and made up, as per Statement (E.)	1,044 8 10	
For Garments issued, cut out, as per Statement (F.)	16 17 7¼	
For Semi-manufactured Articles in Stock, 31st March 1868, as per Statement (G.)	9 15 3¼	
		128,915 10 2
For Value of Cuttings issued to the Storekeeper for Sale by Contract	- -	1,100 10 9
	£.	137,674 1 10

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

G. W. Taylor,
Manager and Inspector of Clothing, R. A. and R. E.

No. 11.—Royal Clothing Factory, Woolwich—*continued.*

STATEMENT (B.)—Manufactured Garments.

Service and Description.	Number.	Cost of Materials. Rate.	Cost of Materials. Amount.	Labour. Cutting. Amount.	Making. Rate. By Hand. Civil.	Making. Rate. By Hand. Military.	Making. Rate. Machine.	Making. Amount.	Total Direct Labour.	Indirect Expenditure.	Total Expenditure.	Rate per Garment.
		s. d.	£. s. d.	£. s. d.	s. d.	s. d.	s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Royal Horse Artillery:												
Jackets, Dress, Staff Serjeants, 1st Class	3	107 2¾	16 1 8¼	– 3 –	10 –	–	–	1 10 –	1 13 –	– 4 2¼	17 18 10½	5 19 7½
Ditto - Staff Serjeants, 2nd Class	2	102 7¾	10 5 3½	– – 8	9 3	–	–	– 18 6	– 19 2	– 2 5¼	11 6 10¾	5 13 5¼
Ditto - S. A. I. in Gunnery -	1	109 11¾	5 9 11¾	– – 4	9 3	–	–	– 9 3	– 9 7	– 1 2½	6 – 9¼	6 – 9¼
Ditto - Serjeants - - -	21	96 7½	101 9 1½	– 7 8½	8 –	–	–	8 8 –	8 15 8¼	1 2 3	111 7 –¾	5 6 –½
Ditto - ditto - - -	3	91 9¼	13 15 3¾	– 1 6	8 –	–	–	1 4 –	1 5 6	– 3 3½	15 4 1¼	5 1 4½
Ditto Rank and File - -	2,545	15 1½	1,924 13 1½	25 9 6½	5 6	–	–	699 17 6	725 7 –½	91 18 1½	2,741 18 3½	1 1 6½
Ditto - ditto - -	69	15 6¾	53 13 9¾	– 9 2½	5 6	–	–	18 19 6	19 8 8½	2 9 7	75 12 1¼	1 1 11
Jackets, Undress ditto - -	357	12 3	218 13 3	4 – 4¾	3 6	–	–	62 9 6	66 9 10¾	8 8 6	293 11 7¾	– 16 5¼
Ditto - ditto - -	30	14 4¾	21 11 10½	– 7 1	3 6	–	–	5 5 –	5 12 1	– 14 5¾	27 18 5¼	– 18 7¼
Royal Artillery:												
Badges, Artificers, Bits - - pairs	120	1 1¾	6 17 6	– – 1¼	– 8	–	–	4 – –	4 – 1¼	– 10 1¾	11 7 9	– *1 10¾
Ditto - Hammer and Tongs. "	50	1 2	2 18 4	– – –¾	– 9	–	–	1 17 6	1 17 6¾	– 4 9¼	5 – 8	– *2 –¼
Ditto - Shoes - "	180	1 5½	13 2 6	– – 2½	– 5	–	–	3 15 –	3 15 2½	– 9 6¼	17 7 2¾	–*1 1 1
Ditto - Spurs - "	80	2 4¾	9 11 8	– – 1¼	– 8	–	–	2 13 4	2 13 5¼	– 6 9¼	12 11 10½	– *3 1¾
Ditto - Wheels - "	100	1 7½	8 2 6	– – 2½	– 9	–	–	3 15 –	3 15 2½	– 9 6¼	12 7 2¾	– *2 5¾
Badges, Good Conduct, Gold - -	4,751	– 8¾	173 4 3¼	– 7 1¾	–	–	– 1½	29 13 10½	30 1 –¼	3 16 1¾	207 1 5¼	– – 10½
Ditto ditto Worsted -	11,556	– –½	24 1 6	– 17 8	–	–	– –¾	36 2 3	36 19 11	4 13 9	65 15 2	– – 1¼
Ditto - ditto - ditto -	405	– –½	– 16 10½	– – 2¾	–	–	– –¾	1 5 3¾	1 5 6½	– 3 3	2 5 8	– – 1½
Buttons, for Forage Caps - - doz.	3	– 1¾	– 5¼	– – –½	–	–	– 1½	– – 4½	– – 5	– – –¾	– – 11	– – 3¾
Backstraps, for Drivers' Cloaks - -	1	– 3½	– 3½	– – –½	–	–	– 1	– – 1	– – 1½	– – –¼	– – 5¼	– – 5¼
Caps, Forage, Staff Serjeants - -	2	7 8¾	– 15 5½	– – 2	–	–	1 1½	– 2 3	– 2 5	– – 3¾	– 18 2¼	– 9 1
Ditto - Serjeants - - -	48	6 3	15 – –	– 7 7¾	–	–	1 1½	2 14 –	3 1 7¾	– 7 9¾	18 9 5½	– 7 8¼
Ditto - Staff and Serjeants, O. P.	233	9 3½	108 4 11½	– 15 2½	–	–	1 1½	13 2 1½	13 17 4	1 15 1½	123 17 5	– 10 7½
Ditto - Rank and File - -	14,819	1 –½	771 16 5½	26 15 10¼	–	–	– 8	493 19 4	520 15 2¼	65 19 8	1,358 11 3¾	– 1 10
Capes, for Cloaks - - - -	126	16 4	102 18 –	– 9 5½	–	–	– 7	3 13 6	4 2 11½	– 10 6¼	107 11 5¾	– 17 1

* "Cutting" was specially charged for a portion only of these badges.

No. 11.—Royal Clothing Factory, Woolwich.—Statement (B.) Manufactured Garments—*continued.*

Service and Description.	Number.	Cost of Materials. Rate.	Cost of Materials. Amount.	Labour. Cutting. Amount.	Making. Rate. By Hand. Civil.	Making. Rate. By Hand. Military.	Making. Rate. Machine.	Making. Amount.	Total Direct Labour.	Indirect Expenditure.	Total Expenditure.	Rate per Garment.
		s. d.	£. s. d.	£. s. d.	s. d.	s. d.	s. d	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Coats, Great, Staff Serjeants - -	8	38 7	15 8 8	– 2 5	–	–	3 6	1 8 –	1 10 5	– 3 10¼	17 2 11¼	2 2 10½
Ditto O. R. - - - - -	27	40 1¾	54 3 11¼	– 19 5	–	–	2 4	3 3 –	4 2 5	– 10 5¼	58 16 9½	2 3 7
Ditto Band - - - - -	126	32 –½	201 17 3	1 9 –¾	–	–	2 4	14 14 –	16 3 –¾	2 – 11¼	220 1 3	1 14 11¼
Chevrons, Gold, Serjeants, O. P. (sets)	85	6 11	29 7 11	– 1 4½	–	–	– 9	3 3 9	3 5 1½	– 8 3¼	33 1 3¾	– 7 9¼
Ditto Corporals, „ „	777½	4 8¾	183 16 11	– 4 11¼	–	–	– 6	19 8 9	19 13 8¼	2 9 10½	206 – 5¾	– 5 3½
Ditto - ditto „ „	70	4 8¼	16 8 1½	– – 2½	–	–	– 6	1 15 –	1 15 2½	– 4 5¾	18 7 9¾	– 5 3
Ditto Bombardiers „ „	1,835	2 4¼	215 19 10¾	– 8 8	–	–	– 3	22 18 9	23 7 5	2 19 2¾	242 6 6½	– 2 7¾
Ditto - ditto „ „	80	2 4	9 6 8	– – 3	–	–	– 3	1 – –	1 – 3	– 2 6¾	10 9 5¾	– 2 7½
Ditto Corporals - „	150	3 3¼	24 10 7½	– – 8	–	–	– 6	3 15 –	3 15 8	– 9 7	28 15 10½	– 3 10
Ditto Bombardiers - „	400	1 7¾	32 18 4	– 1 5	–	–	– 3	5 – –	5 1 5	– 12 10¼	38 12 7¼	– 1 11¼
Chevrons, Worsted, Staff Serjeants „	9	– 6½	– 4 10½	– – 2	–	–	– 6	– 4 6	– 4 8	– – 7	– 10 1½	– 1 1½
Ditto ditto Serjeants „	124	– 4½	2 6 6	– 1 4	–	–	– 4½	2 6 6	2 7 10	– 6 –¾	5 – 4¾	– – 9¾
Ditto ditto Corporals „	78	– 2¾	– 17 10½	– 1 –½	–	–	– 3	– 19 6	1 – 6½	– 2 7¼	2 1 –¼	– – 6¼
Ditto ditto Bombardiers „	149	– 1½	– 18 7½	– 1 2	–	–	– 1½	– 18 7½	– 19 9½	– 2 6¼	2 – 11¼	– – 3¼
Ditto ditto for Duck Frocks, Corporals -	4	– 3½	– 1 2	– – –¾	–	–	– 3	– 1 –	– 1 –¾	– – 1½	– 2 4¼	– – 7
Ditto ditto for Duck Frocks, Bombardiers	10	– 1¾	– 1 5½	– – –¾	–	–	– 1½	– 1 3	– 1 3¾	– – 2	– 2 11¼	– – 3½
Frocks, Serge, Staff Serjeants - -	2	27 1½	2 14 3	– – 5¼	–	–	2 9	– 5 6	– 5 11¼	– – 9	3 – 11¼	1 10 5½
Ditto Serjeants - - -	9	18 11	8 10 3	– 1 4½	–	–	2 6	1 2 6	1 3 10½	– 3 –¼	9 17 1¾	1 1 10¾
Ditto Rank and File - -	13	8 –	5 4 –	– 1 8¾	–	–	1 9	1 2 9	1 4 5¾	– 3 1¼	6 11 7	– 10 1½
Frocks, Tartan, Serjeants - - -	7	20 2½	7 1 5½	– 1 7¼	–	–	2 6	– 17 6	– 19 1¼	– 2 5	8 2 11¾	1 3 3½
Ditto Rank and File - -	69	10 5¼	36 – 2¼	– 14 1¼	–	–	1 9	6 – 9	6 14 10¼	– 17 1	43 12 1½	– 12 7¾
Frocks, Canvas - - - - -	13	2 1	1 7 1	– 1 5	–	–	– 10	– 10 10	– 12 3	– 1 6½	2 – 10½	– 3 1¾
Jackets, Rank and File - - -	3,025	11 11½	1,808 13 11½	21 1 11¼	–	–	2 9	415 18 9	437 – 8¼	55 7 6	2,301 2 1¾	– 15 2¾
Ditto - ditto - - -	414	11 11½	247 10 9	2 17 8¾	–	–	2 10	58 13 –	61 10 8¾	7 15 11¼	316 17 5	– 15 3¾
Ditto - ditto - - -	277	11 11½	165 12 5½	1 18 7¾	3 3	–	–	45 – 3	46 18 10¾	5 18 11½	218 10 3¾	– 15 9¼
Ditto - ditto - - -	16	11 11½	9 11 4	– 2 8¼	–	–	2 9	2 4 –	2 6 8¼	– 6 –¼	12 4 –½	– 15 3
Ditto, Battery Staff Serjeants, T. P.	2	31 11½	3 3 11	– – 4¾	5 –	–	–	– 10 –	– 10 4¾	– 1 3¾	3 15 7½	1 17 9¾
Ditto, Serjeants, T. P. - - -	10	21 –	10 10 –	– 1 10¾	4 –	–	–	2 – –	2 1 10¾	– 5 3¾	12 17 2½	1 5 8¾
Ditto, Rank and File, T. P. - -	157	11 9½	92 11 3½	1 1 8¼	–	–	2 9	21 11 9	22 13 5¼	2 17 5½	118 2 2¼	– 15 –½
Ditto, Tartan, Serjeant Instructors, Royal Laboratory - -	1	12 2½	– 12 2½	– – 2½	–	–	2 3	– 2 3	– 2 5½	– – 3¾	– 14 11¾	– 14 11¾
Overalls, Unbooted, Staff and Serjeants	94	19 9	92 16 6	– 19 4½	–	–	2 2	10 3 8	11 3 –½	1 8 3	105 7 9½	1 2 5
Ditto - ditto - ditto -	23	18 –	20 14 –	– 8 10½	–	–	2 2	2 9 10	2 18 8½	– 7 9¼	24 – 5¾	1 – 10½
Ditto - ditto - ditto -	10	18 –	9 – –	– 3 11	–	2 7	–	1 5 10	1 9 9	– 3 11	10 13 8	1 1 4½
Ditto - ditto - ditto -	4	18 –	3 12 –	– 1 7	3 3	–	–	– 13 –	– 14 7	– 1 10¾	4 8 5¾	1 2 1½

Overalls, Unbooted, Rank and File	2,626	18	2½	2,390	15	1	20	13	11½	–		–	2	–	262	12	–	283	5	11½	35	17	11	2,709	18	11½	1	–	7¾
Ditto, Booted - ditto	40	21	6¾	43	2	6	–	6	5	–		–	2	5	4	16	8	5	3	1	–	13	–¾	48	18	7¾	1	4	5½
Trowsers, Band Staff	4	38	8½	7	14	10	–	–	9	3	6	–		–	–	14	–	–	14	9	–	1	10½	8	11	5½	2	2	10¼
Ditto ditto	2	37	4¾	3	14	9½	–		–	3	6	–		–	–	7	–	–	7	–	–	–	10¾	4	2	8¼	2	1	4
Ditto ditto	3	37	4¾	5	12	2¼	–		–		–	–	2	3	–	6	9	–	6	9	–	–	10¼	5	19	9½	1	19	11
Trowsers, Staff Serjeants, Serjeants, and Musicians.	1,612	15	7¼	1,257	13	11	23	6	5¼	–		–	1	9	141	1	–	164	7	5¼	20	16	6½	1,442	17	10¾	–	17	10¾
Ditto - ditto - ditto	172	15	6	133	6	–	1	15	11	–		–	1	9	15	1	–	16	16	11	2	4	1	152	7	–	–	17	8½
Ditto - ditto - ditto	32	15	6	24	16	–	–	6	8	–		2	3	–	3	12	–	3	18	8	–	10	2¼	29	4	10¼	–	18	3¼
Trowsers, Serjeants, O. P.	9	16	5½	7	8	1½	–	3	4½	–		–	1	9	–	15	9	–	19	1½	–	2	6½	8	9	9½	–	18	10¼
Ditto Rank and File	14,327	14	5	10,327	7	7	79	12	3	–		–	1	5	1,014	16	7	1,094	8	10	138	13	5¼	11,560	9	10¼	–	16	1¾
Ditto - ditto	34	14	10½	25	5	–½	–	3	5¾	–		–	1	5	2	8	2	2	11	7¾	–	6	7¾	28	3	4	–	16	6¾
Trowsers, Serge, Staff Serjeants	2	12	8	1	5	4	–	–	3¾	–		–	2	–	–	4	–	–	4	3¾	–	–	6½	1	10	2½	–	15	1
Ditto ditto O. R.	601	6	8¾	202	4	2¾	1	15	1	–		–	1	5	42	11	5	44	6	6	5	12	4	252	3	–¾	–	8	4¾
Trowsers, Tartan	175	8	8½	76	3	11½	1	–	6	–		–	1	5	12	7	11	13	8	5	1	14	–	91	6	4½	–	10	5¼
Ditto Canvas	13	2	1¾	1	7	10¾	–	1	5	–		–	–	9	–	9	9	–	11	2	–	1	5	2	–	5¾	–	3	1¼
Tunics, Officers	1	50	5¼	2	10	5¼	–	–	9¼	16	–	–		–	–	16	–	–	16	9¼	–	2	1¼	3	9	3¾	3	9	3¾
Ditto, Master Gunners	7	42	5	14	16	11	–	1	10¼	10	–	–		–	3	10	–	3	11	10¼	–	9	1¼	18	17	10½	2	13	11¾
Ditto - ditto	11	42	9	23	10	3	–	2	2¼	10	–	–		–	5	10	–	5	12	2¼	–	14	3¾	29	16	9	2	14	3
Tunics, Staff Serjeants, 1st Class	26	57	6¾	74	16	7½	–	12	3½	10	–	–		–	13	–	–	13	12	3½	1	14	6	90	3	5	3	9	4¼
Ditto - ditto - ditto	14	60	5¾	42	6	8½	–	7	11½	10	–	–		–	7	–	–	7	7	11½	–	19	¾	50	13	8¾	3	12	5
Ditto - ditto - ditto	3	60	5¾	9	1	5¼	–	1	8½		–	7	6	–	1	2	6	1	4	2½	–	3	1½	10	8	9¼	3	9	7
Tunics, Laboratory and Range, Serjeants	7	54	7½	19	2	4½	–	7	–	9	–	–		–	3	3	–	3	10	–	–	9	1¾	23	1	6¼	3	5	11¼
Ditto ditto - ditto	2	54	7½	5	9	3	–	2	–		–	6	6	–	–	13	–	–	15	–	–	1	11¾	6	6	2¾	3	3	1¼
Tunics, S. A. I. in Gunnery, 2nd Class	6	60	3¾	18	1	10½	–	2	10¼	9	3	–		–	2	15	6	2	18	4¼	–	7	4¾	21	7	7½	3	11	3¼
Ditto, Trumpet Majors	3	61	7½	9	4	10½	–	1	5½	9	3	–		–	1	7	9	1	9	2½	–	3	8½	10	17	9½	3	12	7¼
Ditto, Battery Staff Serjeants	26	46	4	60	4	8	–	9	1¼	6	9	–		–	8	15	6	9	4	7¼	1	3	4¾	70	12	8	2	14	4
Ditto - ditto	11	48	11½	26	18	6½	–	4	6	6	9	–		–	3	14	3	3	18	9	–	10	1½	31	7	5	2	17	–½
Ditto - ditto	2	48	11½	4	17	11	–	–	10		–	4	6	–	–	9	–	–	9	10	–	1	3½	5	9	–½	2	14	6¼
Tunics, Serjeants	343	44	2	757	9	2	6	4	5½	6	6	–		–	111	9	6	117	13	11½	14	18	3¼	890	1	4¾	2	11	10¾
Ditto ditto	161	46	3	372	18	3	3	8	1¾	6	6	–		–	52	6	6	55	14	7¾	7	3	9¼	435	16	8	2	14	1¾
Ditto ditto	4	46	3	8	13	–	–	1	8¼		–	4	3	–	–	17	–	–	18	8¼	–	2	4¾	9	14	1	2	8	6¼
Tunics, Rank and File	2,852	16	1¼	2,299	8	6	27	14	1¾	5	–		–	–	713	–	–	740	14	1¾	93	17	–½	3,133	19	8¼	1	1	11¾
Ditto - ditto	2	16	7	1	13	2	–	–	5½	5	–		–	–	–	10	–	–	10	5½	–	1	4¼	2	4	11¾	1	2	5¾
Tunics, Regimental Band, Master	1	171	10¼	8	11	10¼	–		–	31	–		–	–	1	11	–	1	11	–	–	3	11	10	6	9¼	10	6	9¼
Ditto - ditto - S. Serjeants	1	99	7¾	4	19	7¾	–		–	27	–		–	–	1	7	–	1	7	–	–	3	5	6	10	–¾	6	10	–¾
Ditto - ditto - ditto	1	108	11¼	5	8	11¼	–	–	7		–	23	–	–	1	3	–	1	3	7	–	3	–	6	15	6¼	6	15	6½
Ditto - ditto - Serjeants	3	87	2¼	13	1	6¾	–	1	9	15	–		–	–	2	5	–	2	6	9	–	5	11	15	14	2¾	5	4	9
Ditto - ditto - ditto	2	80	4½	8	–	9	–		–		–	12	3	–	1	4	6	1	4	6	–	3	1¼	9	8	4¼	4	14	2
Ditto - ditto - Musicians	60	71	4	214	–	–	1	15	–	14	–		–	–	42	–	–	43	15	–	5	10	10½	263	5	10½	4	7	9¼
Ditto - ditto - ditto	27	72	5	97	15	3	–		–	14	–		–	–	18	18	–	18	18	–	2	7	10¾	119	1	1¾	4	8	2¼
Ditto - ditto - ditto	19	72	5	68	15	11	–		–		–	11	3	–	10	13	9	10	13	9	1	7	–¾	80	16	8¾	4	5	1
Tunics, Bugle Band, Serjeants	1	61	10¼	3	1	10¼	–	–	3¾	8	6		–	–	–	8	6	–	8	9¾	–	1	1½	3	11	9½	3	11	9½
Ditto ditto - ditto	1	48	9¼	2	8	9¼	–		–		–	7	–	–	–	7	–	–	7	–	–	–	10½	2	16	7¾	2	16	7¾
Ditto ditto Musicians	42	14	9¼	31	–	4½	–	14	7¼	6	–		–	–	12	12	–	13	6	7¼	1	13	9¼	46	–	9	1	1	11
Waistcoats, Serge	1	1	7¼	–	1	7¼	–	–	1		–		–	1	6	–	1	6	–	1	7	–	–	2½	–	3	4¾	–	3	4¾

No. 11.—Royal Clothing Factory, Woolwich.—Statement (B.) Manufactured Garments—*continued.*

Service and Description.	Number.	Cost of Materials. Rate.	Cost of Materials. Amount.	Labour. Cutting. Amount.	Making. Rate. By Hand. Civil.	Making. Rate. By Hand. Military.	Making. Rate. Machine.	Making. Amount.	Total Direct Labour.	Indirect Expenditure.	Total Expenditure.	Rate per Garment.
		s. d.	£. s. d.	£. s. d.	s. d.	s. d.	s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Royal Engineers:												
Badges, Artificers, Bits - - pairs	15	1 2¼	– 17 9¾	- -	– 8	–	–	– 10 –	– 10 –	– 1 3¼	1 9 1	– 1 11¼
Ditto Shoes - - „	20	1 6¾	1 11 3	- -	– 5	–	–	– 8 4	– 8 4	– 1 –¾	2 – 7¾	– 2 –¼
Ditto Wheels - „	27	1 7½	2 3 10½	- -	– 9	–	–	1 – 3	1 – 3	– 2 6¾	3 6 8¼	– 2 5½
Badges, Good Conduct, Gold - -	2,870	– 9	107 12 6	– 4 9¾	–	–	– 1½	17 18 9	18 3 6¾	2 6 –¾	128 2 1½	– – 10¾
Ditto - Worsted - -	4,270	– –½	8 17 11	– 5 5	–	–	– –¾	13 6 10½	13 12 3½	1 14 6	24 4 8½	– – 1¼
Caps, Forage, Staff and Serjeants, O. P.	6	8 9½	2 12 9	– – 4½	–	–	1 2½	– 7 3	– 7 7½	– – 11½	3 1 4	– 10 2¾
Ditto Staff Serjeants - -	3	8 1¾	1 4 5¼	– – 1¾	–	–	1 2½	– 3 7½	– 3 9¼	– – 5¾	1 8 8¼	– 9 6¾
Ditto Serjeants - - -	28	7 3½	10 4 2	– 1 7¼	–	–	1 2½	1 13 10	1 15 5¼	– 4 5¾	12 4 1	– 8 8½
Coats, Frock, Staff Serjeants - -	4	24 4½	4 17 6	– 1 –¾	8 –	–	–	1 12 –	1 13 –¾	– 4 2¼	6 14 9	1 13 8¼
Coats, Great, ditto - - -	30	39 3	58 17 6	– 7 8¼	–	–	3 6	5 5 –	5 12 8¼	– 14 3¼	65 4 5½	2 3 5¾
Ditto O. R. - - - -	100	38 3¼	191 7 1	1 3 5½	–	–	2 4	11 13 4	12 16 9½	1 12 6½	205 16 5	2 1 2
Chevrons, Gold, Serjeants - - sets	2	5 –¾	– 10 1½	– – –½	–	–	– 9	– 1 6	– 1 6½	– – 2¼	– 11 10¼	– 5 11
Ditto Corporals - „	200	3 3	32 10 –	– 1 1½	–	–	– 6	5 – –	5 1 1½	– 12 9¾	38 3 11¼	– 3 9¾
Ditto 2nd Corporals - „	200	1 7¾	16 9 2	– 1 1½	–	–	– 3	2 10 –	2 11 1½	– 6 5¾	19 6 9¼	– 1 11¼
Ditto Lance Corporals „	350	– 10	14 11 8	– – 11¾	–	–	– 1½	2 3 9	2 4 8¾	– 5 8¼	17 2 1	– – 11¾
Ditto Corporals, O. P. „	350	4 9½	83 9 9½	– 1 11	–	–	– 6	8 15 –	8 16 11	1 2 5¼	93 9 1¾	– 5 4
Ditto 2nd Corporals, O. P. „	350	2 4½	41 11 3	– 1 6¼	–	–	– 3	4 7 6	4 9 –¼	– 11 3¼	46 11 6½	– 2 7¾
Ditto Lance Corporals, O. P. - - „	250	1 2½	15 2 1	– – 10¼	–	–	– 1½	1 11 3	1 12 1¼	– 4 1	16 18 3¼	– 1 4¼
Chevrons, Worsted, ditto - „	2	– –½	– – 1	– – 1¼	–	–	– –¾	– – 1½	– – 2¾	– – –¼	– – 4	– – 2
Frocks, Serge, Colour Serjeants - -	2	23 1¾	2 6 3½	– – 5¾	–	–	2 9	– 5 6	– 5 11¾	– – 9	2 13 –¼	1 6 6
Ditto Serjeants - - -	14	21 2½	14 16 11	– 2 2½	–	–	2 6	1 15 –	1 17 2½	– 4 8½	16 18 10	1 4 2½
Ditto Rank and File - -	321	11 –	176 11 –	3 6 2	–	–	1 9	28 1 9	31 7 11	3 19 6¾	211 18 5¾	– 13 2½
Jackets, Colour Serjeants - - -	7	22 6½	7 17 9½	– 2 3¾	4 1½	–	–	1 8 10½	1 11 2¼	– 3 11½	9 12 11¼	1 7 6¾
Ditto Serjeants - - - -	50	21 6	53 15 –	– 12 1¼	4 –	–	–	10 – –	10 12 1¼	1 6 10½	65 13 11¾	1 6 3¼
Ditto - - - - -	3	22 4¼	3 7 –¾	– – 10	4 –	–	–	– 12 –	– 12 10	– 1 8	4 1 6¾	1 7 2¼
Jackets, Rank and File - - -	1,513	12 1¼	915 13 7¼	8 14 8½	–	–	2 9	208 – 9	216 15 5½	27 9 4	1,159 18 4¾	– 15 4
Ditto ditto - - -	517	12 1¼	312 17 10¼	2 19 8½	–	–	2 10	73 4 10	76 4 6⅞	9 13 2	398 15 6¾	– 15 5
Ditto ditto - - -	1,182	12 1¼	715 7 1½	6 16 5¾	3 3	–	–	192 1 6	198 17 11¾	25 4 –½	939 9 1¾	– 15 10¾
Trousers, Uniform, Staff Serjeants -	5	18 2½	4 11 –½	– – 10¼	–	–	1 9	– 8 9	– 9 7¼	– 1 2½	5 1 10¼	1 – 4½
Ditto Working, ditto - } Ditto Uniform, Serjeants - - }	82	13 11	57 1 2	– 16 –	–	–	1 9	7 3 6	7 19 6	1 – 2½	66 – 10½	– 16 1¼
Ditto Working, ditto - -	64	11 6	36 16 –	– 12 4	–	–	1 5	4 10 8	5 3 –	– 13 –½	42 12 –½	– 13 3¾
Ditto Rank and File - - -	3,110	10 8½	1,665 2 11	12 5 4½	–	–	1 5	220 5 10	232 11 2½	29 9 4	1,927 3 5½	– 12 4¾
Ditto ditto - - -	2	10 11¼	1 1 10½	– – 3	–	–	1 5	– 2 10	– 3 1	– – 4¾	1 5 4½	– 12 8

Trowsers, Rank and File, N. P. -	1	13	2	-	13	2	-	-	4		-	-	1	10	-	1	10	-	2	2	-	-	3¼	-	15	7¼	-	15	7¼
Tunics, Staff Serjeants - - -	4	72	9¼	14	11	1	-	1	5½	10	-	-		-	2	-	-	2	1	5½	-	5	3	16	17	9½	4	4	5¼
Ditto Colour Serjeants - - -	7	50	1¼	17	11	-¼	-	2	1¼	6	9	-		-	2	7	3	2	9	4¼	-	6	3	20	6	7½	2	18	1
Ditto Serjeants - - - -	50	48	1¾	120	7	3½	-	14	1¾	6	6	-		-	16	5	-	16	19	1¾	2	2	11¾	139	9	5	2	15	9½
Ditto ditto - - - - -	3	48	4¼	7	5	-¾	-	-	7	6	6	-		-	-	19	6	1	-	1	-	2	6¾	8	7	8½	2	15	10¾
Tunics, Rank and File - - -	3,126	16	7¼	2,595	4	7½	23	18	11½	5	-	-		-	781	10	-	805	8	11½	102	1	1¼	3,502	14	8¼	1	2	5
Ditto - ditto - - - -	18	16	3¾	14	13	7½	-	2	7	5	-	-		-	4	10	-	4	12	7	-	11	9¾	19	18	-¼	1	2	1¼
Tunics, Tartan, Rank and File - -	100	9	6½	47	14	2	-	19	-¾	3	6	-		-	17	10	-	18	9	-¾	2	6	9	68	9	11¾	-	13	8½
Military Train:																													
Badges, Good Conduct, Gold - -	541	-	8¾	19	14	5¾	-	-	9		-	-	-	1½	3	7	7½	3	8	4½	-	8	8	23	11	6½	-	-	10½
Ditto - ditto - Worsted - -	1,716	-	-½	3	11	6	-	2	1¼	-	-	-	-	-¾	5	7	3	5	9	4¼	-	13	10¼	9	14	8½	-	-	1¼
Caps, Forage, Rank and File - -	23	1	2¾	1	8	3¼	-	2	2	-	-	-	-	8	-	15	4	-	17	6	-	2	2¾	2	8	-	-	2	1
Chevrons, Gold, Corporals, O. P. (sets)	20	2	3¾	2	6	3	-	-	1¼	-	-	-	-	3	-	5	-	-	5	1¼	-	-	7¾	2	12	-	-	2	7¼
Ditto Lance Corporals O. P. "	10	1	2¼	-	11	10½	-	-	-½	-	-	-	-	1½	-	1	3	-	1	3½	-	-	2	-	13	4	-	1	4
Chevrons, Gold, Corporals - - "	136	1	7½	11	1	-	-	-	5	-	-	-	-	3	1	14	-	1	14	5	-	4	4¼	12	19	9¼	-	1	11
Ditto ditto Lance Corporals "	88	-	10	3	13	4	-	-	1½	-	-	-	-	1½	-	11	-	-	11	1½	-	1	5	4	5	10½	-	-	11¾
Frocks, Serge, Staff Serjeants - -	3	26	10¾	4	-	8¼	-	-	7½	-	-	-	2	3	-	6	9	-	7	4½	-	-	11¼	4	9	-	1	9	8
Ditto ditto Serjeants - - -	6	10	5¾	3	2	10½	-	-	9¾	-	-	-	2	1½	-	12	9	-	13	6¾	-	1	8¾	3	18	2	-	13	-½
Ditto ditto Rank and File - -	17	8	4½	7	2	4½	-	1	7¾	-	-	-	1	9	1	9	9	1	11	4¾	-	3	11¾	8	17	9	-	10	5½
Overalls, Booted, Serjeants - -	92	21	6¼	98	19	11	-	17	6¾	-	-	-	2	7	11	17	8	12	15	2¾	1	12	4	113	7	5¾	1	4	7¾
Ditto - ditto Rank and File -	853	20	8	881	8	8	5	11	-½	-	-	-	2	5	103	1	5	108	12	5½	13	15	3¼	1,003	16	4¾	1	3	6½
Ditto Unbooted, Serjeants - -	72	19	5¼	69	19	6	-	10	1	-	-	-	2	2	7	16	-	8	6	1	1	1	-½	79	6	7½	1	2	-½
Ditto - ditto - Rank and File -	761	17	5¼	663	9	11¼	4	8	-¾	-	-	-	2	-	76	2	-	80	10	-¾	10	4	-	754	4	-	-	19	9¾
Ditto - ditto - ditto - -	30	17	8¾	26	11	10½	-	2	10	-	-	-	2	-	3	-	-	3	2	10	-	8	2	30	2	10½	1	-	1
Trowsers, Serjeants - - - -	139	14	5¾	100	12	7¼	-	14	1	-	-	-	1	9	12	3	3	12	17	4	1	12	7½	115	2	6½	-	16	6¾
Ditto Rank and File - - -	277	13	10½	192	3	4½	3	-	10	-	-	-	1	5	19	12	5	22	13	3	2	17	5¼	217	14	-¾	-	15	8½
Ditto Serge, Staff Serjeants - -	3	11	7¾	1	14	11¼	-	-	5¾	-	-	-	2	-	-	6	-	-	6	5¾	-	-	9¾	2	2	2¾	-	14	1
Ditto ditto O. R. - - -	23	6	9	7	15	3	-	1	10	-	-	-	1	5	1	12	7	1	14	5	-	4	4¼	9	14	-¼	-	8	5¼
Ditto Duck - - - - -	60	2	9¼	8	6	3	-	3	6¼	-	-	-	1	-	3	-	-	3	3	6¼	-	8	-¼	11	17	9¾	-	3	11½
Ditto ditto - - - - -	20	3	3	3	5	-	-	1	-	-	-	-	1	-	1	-	-	1	1	-	-	2	8½	4	8	8½	-	4	5¼
Tunics, Serjeants - - - -	168	19	5½	163	9	-	1	7	6¼	4	6	-		-	37	16	-	39	3	6¼	4	19	3½	207	11	9¾	1	4	8½
Ditto ditto - - - - -	1	20	11½	1	-	11½	-	-	2¾	4	6	-		-	-	4	6	-	4	8¾	-	-	7¼	1	6	3½	1	6	3½
Ditto Rank and File - - -	1,756	14	8½	1,291	7	10	11	12	-½	4	-	-		-	351	4	-	362	16	-½	45	19	4½	1,700	3	3	-	19	4½
Ditto - ditto - - - -	29	14	8¾	21	7	1¾	-	4	8¾	4	-	-		-	5	16	-	6	-	8¾	-	15	5¾	28	3	4¼	-	19	5
Waistcoats, Serge - - - -	1,979	2	9¾	278	5	11¼	2	18	1	-	7	-		-	57	14	5	60	12	6	7	13	7½	346	12	-¾	-	3	6
Military Store Staff Corps:																													
Blouses, Serjeant Major - - -	1	9	6	-	9	6	-	-	2		-	-	2	3	-	2	3	-	2	5	-	-	3¾	-	12	2¾	-	12	2¾
Ditto 1st and 2nd Class Storeholders	16	9	2½	7	7	4	-	2	3¾	-	-	-	2	-	1	12	-	1	14	3¾	-	4	4	9	5	11¾	-	11	7½
Ditto 3rd Class Storeholders - -	34	9	2	15	11	8	-	5	2½	-	-	-	1	11¼	3	5	10½	3	11	1	-	8	11¾	19	11	8¾	-	11	6¼
Ditto Rank and File - - -	496	8	6½	211	16	8	5	16	3½	-	-	-	1	9	43	8	-	49	4	3½	6	4	8¾	267	5	8¼	-	10	9¼

No. 11.—Royal Clothing Factory, Woolwich.—Statement (B.) Manufactured Garments—*continued.*

Service and Description.	Number.	Cost of Materials. Rate.	Cost of Materials. Amount.	Labour. Cutting. Amount.	Labour. Making. Rate. By Hand. Civil.	Labour. Making. Rate. By Hand. Military.	Labour. Making. Rate. Machine.	Labour. Making. Amount.	Labour. Total Direct Labour.	Indirect Expenditure.	Total Expenditure.	Rate per Garment.
		s. d.	£. s. d.	£. s. d.	s. d.	s. d.	s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Caps, Forage, 3rd Class Storeholders -	9	7 1	3 3 9	– – 7¾	–	–	1 2½	– 10 10½	– 11 6¼	– 1 5½	3 16 8¾	– 8 6¼
Ditto Serjeants - - -	2	6 2¼	– 12 4½	– – 2	–	–	1 1½	– 2 3	– 2 5	– – 3¾	– 15 1¼	– 7 6½
Ditto Rank and File - -	101	– 11	4 12 7	– 2 6½	–	–	– 8	3 7 4	3 9 10½	– 8 10	8 11 3½	– 1 8½
Chevrons, Gold, Serjeants (sets) -	3	3 8¾	– 11 2¼	– – –¾	–	–	– 4½	– 1 1½	– 1 2¼	– – 1¾	– 12 6¼	– 4 2
Ditto 2nd and Lance Corporals - (sets)	1	– 9¾	– – 9¾	– – –½	–	–	– 1½	– – 1½	– – 2	– – –¼	– 1 –	– 1 –
Chevrons, Worsted, for Blouses, Serjeants "	6	– 3	– 1 6	– – 1	–	–	– 2¼	– 1 1½	– 1 2½	– – 1¾	– 2 10¼	– – 5¾
Ditto - ditto ditto Corporals - "	24	– 1½	– 3 –	– – 1¾	–	–	– 1½	– 3 –	– 3 1¾	– – 4¾	– 6 6½	– – 3½
Ditto - ditto ditto Lance Corporals - "	48	– –¾	– 3 –	– – 3¾	–	–	– –¾	– 3 –	– 3 3¾	– – 5	– 6 8¾	– – 1¾
Coats, Great, O. R. - - - -	1	33 9¾	1 13 9¾	– – 5½	–	–	2 4	– 2 4	– 2 9½	– – 4¼	1 16 11½	1 16 11½
Jackets, Rank and File - - -	12	12 8	7 12 –	– 1 10½	–	–	2 9	1 13 –	1 14 10½	– 4 5	9 11 3½	– 15 11¼
Ditto - ditto - - - -	6	12 8	3 16 –	– – 11¼	3 3	–	–	– 19 6	1 – 5¼	– 2 7	4 19 –¼	– 16 6
Tunics, Serjeant Majors - - -	1	49 5¾	2 9 5¾	– – 2½	10 –	–	–	– 10 –	– 10 2½	– 1 3½	3 – 11¾	3 – 11¾
Ditto 1st Class, Storeholders - -	8	43 1	17 4 8	– 2 5	9 4½	–	–	3 15 –	3 17 5	– 9 9½	21 11 10½	2 13 11¾
Ditto 2nd ditto - ditto - - -	6	40 11	12 5 6	– 1 9¾	9 3	–	–	2 15 6	2 17 3¾	– 7 3¼	15 10 1	2 11 8¼
Ditto 3rd ditto - ditto - - -	32	33 1¼	52 19 4	– 12 9	6 –	–	–	9 12 –	10 4 9	1 5 11¼	64 10 –¼	2 – 3¾
Ditto Colour Serjeants - - -	6	34 6½	10 7 3	– 2 4½	6 –	–	–	1 16 –	1 18 4½	– 4 10¼	12 10 5¾	2 1 9
Ditto Serjeants - - - -	30	30 8¾	46 1 10½	– 11 4¾	5 10½	–	–	8 16 3	9 7 7¾	1 3 9½	56 13 3¾	1 17 9½
Ditto Rank and File - - -	494	17 11¼	443 1 1½	9 9 6¼	5 –	–	–	123 10 –	132 19 6¼	16 16 11¾	592 17 7½	1 4 –
Commissariat Staff Corps:												
Frocks, Serge, Staff Serjeants - -	1	16 7¼	– 16 7¼	– – 2	–	–	2 3	– 2 3	– 2 5	– – 3¾	– 19 4	– 19 4
Ditto - Serjeants - - -	1	8 1½	– 8 1½	– – 1½	–	–	2 1½	– 2 1½	– 2 2¾	– – 3¼	– 10 7½	– 10 7½
Ditto - Rank and File - -	4	5 6¼	1 2 1	– – 4	–	–	1 9	– 7 –	– 7 4	– – 11¼	1 10 4¼	– 7 7
Militia Artillery:												
Badges, Re-enrolment, Silver - -	92	– 8	3 1 4	– – 3¾	–	–	– 1½	– 11 6	– 11 9¾	– 1 6	3 14 7¾	– – 9¾
Ditto - ditto Worsted - -	2,120	– –½	4 8 4	– 2 9¼	–	–	– –¾	6 12 6	6 15 3¼	– 17 1¾	12 – 9	– – 1¼
Caps, Forage, Staff and Serjeants, O. P.	36	8 3¼	14 17 9	– 5 11	–	–	1 1½	2 – 6	2 6 5	– 5 10½	17 10 –½	– 9 8¾
Ditto Serjeants - - -	134	6 4¼	42 11 5½	1 12 1¼	–	–	1 1½	7 10 9	9 2 10¼	1 3 2	52 17 5¾	– 7 10½
Ditto Rank and File - -	1,351	1 –¼	68 19 1¾	5 16 8½	–	–	– 8	45 – 8	50 17 4½	6 8 10½	126 5 4¾	– 1 10½

Chevrons, Silver, Corporals (sets) -	66	3	3	10	14	6	--	-	4½		-	-	-	6	1	13	-	1	13	4½	-	4	2¾	12	12	-	-	3	9¾
Ditto - Bombardiers, (Vellum Lace).	68½	1	5½	4	19	10¾	-	-	4		-	-	-	3	-	17	1½	-	17	5½	-	2	2½	5	19	6¾	-	1	9
Ditto - Corporals (O. P.) -	77½	3	11	15	3	6½	-	-	5½		-	-	-	6	1	18	9	1	19	2½	-	4	11½	17	7	8½	-	4	6
Ditto - Bombardiers „ -	36½	1	11¾	3	12	3	-	-	2¼		-	-	-	3	-	9	1½	-	9	3¾	-	1	2¼	4	2	9	-	2	3¼
Ditto, Worsted, Staff Serjeants -	1	-	11	-	-	11	-	-	-¾		-	-	-	6	-	-	6	-	-	6¾	-	-	-¾	-	1	6½	-	1	6½
Ditto - Serjeants - . -	1½	-	4	-	-	6	-	-	1¼		-	-	-	4½	-	-	6¾	-	-	8	-	-	1	-	1	3	-	-	10
Coats, Great, Staff Serjeants - -	2	39	8¾	3	19	5½	-	-	5¼		-	-	3	6	-	7	-	-	7	5¼	-	-	11½	4	7	10¼	2	3	11
Ditto - Rank and File - -	1	40	4¾	2	-	4¾	-	-	3½		-	-	2	4	-	2	4	-	2	7½	-	-	4	2	3	4¼	2	3	4¼
Jackets, Staff Serjeants - - -	14	42	6¼	29	15	3½	-	3	8¼	5	7½	-		-	3	18	9	4	2	5¼	-	10	5¼	34	8	2	2	9	2
Ditto, S. A. I. in gunnery - -	7	40	6¼	14	3	7¾	-	1	8¼	5	1½	-		-	1	15	10½	1	17	6¾	-	4	9¼	16	5	11¾	2	6	6¾
Ditto, Trumpet Majors - - -	8	39	-¾	15	12	6	-	5	3	5	1½	-		-	2	1	-	2	6	3	-	5	10½	18	4	7½	2	5	7
Ditto, Company Serjeants - -	45	21	6¾	48	10	3¾	-	9	5	4	1½	-		-	9	5	7½	9	15	-½	1	4	8½	59	10	-¾	1	6	5¼
Ditto, Serjeants - - - -	90	20	10½	93	18	9	1	9	5¼	4	-	-		-	18	-	-	19	9	5¼	2	9	4	115	17	6¼	1	5	9
Ditto, Trumpeters - - - -	42	12	3¾	25	17	1½	1	3	5¼	3	4½	-		-	7	1	9	8	5	2¼	1	-	11¼	35	3	3	-	16	9
Ditto, Rank and File - - -	138	12	4¼	85	4	10½	3	2	5		-	-	2	9	18	19	6	22	1	11	2	16	-	110	2	9½	-	15	11½
Ditto - ditto - - - -	57	12	4¼	35	4	2¼	1	5	9¼		-	-	2	10	8	1	6	9	7	3¼	1	3	8¾	45	15	2¼	-	16	-¾
Ditto - ditto - - - -	241	12	4¼	148	17	4¼	5	8	11¾	3	3	-		-	39	3	3	44	12	2¾	5	13	-¾	199	2	7¾	-	16	6¼
Ditto, Band Serjeants - - -	1	38	2¾	1	18	2¾	-	-	2½	5	-	-		-	-	5	-	-	5	2½	-	-	8	2	4	1¼	2	4	1¼
Ditto, Musicians - - - -	21	17	1½	17	19	7½	-	11	7½	3	3	-		-	3	8	3	3	19	10½	-	10	1½	22	9	7½	1	1	5
Tunics, Staff Serjeants - - -	25	54	2	67	14	2	-	7	6½	10	-	-		-	12	10	-	12	17	6½	1	12	7½	82	4	4	3	5	9¼
Ditto, S. A. I. in gunnery - -	13	56	7¾	36	16	4¾	-	3	6	9	3	-		-	6	-	3	6	3	9	-	15	8¼	43	15	10	3	7	4½
Ditto, Trumpet Majors - - -	14	58	3	40	15	6	-	4	5½	9	3	-		-	6	9	6	6	13	11½	-	16	11¾	48	6	5¼	3	9	-½
Ditto, Company Serjeants - - -	67	42	2¾	141	9	4¼	2	1	11½	6	9	-		-	22	12	3	24	14	2½	3	2	7½	169	6	2¼	2	10	6½
Ditto, Serjeants - - - -	124	41	1½	254	19	6	2	6	10¼	6	6	-		-	40	6	-	42	12	10¼	5	7	11¾	303	-	4	2	8	10½
Ditto, Trumpeters - - - -	74	17	-½	63	1	1	2	4	4½	5	3	-		-	19	8	6	21	12	10½	2	14	10¼	87	8	9¾	1	3	7½
Ditto, Rank and File - - -	325	16	7¼	269	16	4¼	7	13	-½	5	-	-		-	81	5	-	88	18	-½	11	5	3½	369	19	8¼	1	2	9¼
Ditto, Band Serjeants - - -	1	54	1¼	2	14	1¼	-	-	7¼	9	3	-		-	-	9	3	-	9	10¼	-	1	3	3	5	2½	3	5	2½
Ditto, Musicians - - - -	41	33	6¾	68	16	-¾	1	5	11	6	-	-		-	12	6	-	13	11	11	1	14	5½	84	2	5¼	2	1	-½
Royal Military Academy:																													
Caps, Forage, Gentlemen Cadets -	201	10	1½	101	15	1½	-	11	5½		-	-	1	-	10	1	-	10	12	5½	1	6	11	113	14	6	-	11	3¾
Trowsers - ditto - - -	1	20	5¾	1	-	5¾			-	4	6	-		-	-	4	6	-	4	6	-	-	6¾	1	5	6½	1	5	6½
Ditto - - ditto - - -	337	20	5¾	345	1	5¾	6	-	11½		-	-	3	-	50	11	-	56	11	11½	7	3	5¼	408	16	10½	1	4	3¼
Tunics, Gentlemen Cadets (R. U. Officers)	1	44	4½	2	4	4½	-	-	9¾	12	6	-		-	-	12	6	-	13	3¾	-	1	8¼	2	19	4½	2	19	4½
Ditto - ditto - (S. U. Officers)	7	38	7	13	10	1	-	5	6½	9	9	-		-	3	8	3	3	13	9½	-	9	4¼	17	13	2¾	2	10	5½
Ditto - ditto - (Corporals) -	25	36	-	45	-	-	-	19	11¾	8	6	-		-	10	12	6	11	12	5¾	1	9	5½	58	1	11¼	2	6	5¾
Ditto - ditto - - - -	4	26	6¼	5	6	1	-	2	9	9	6	-		-	1	18	-	2	-	9	-	5	2	7	12	-	1	18	-
Ditto - ditto - - - -	305	26	6¼	404	8	10¼	11	15	1½	7	-	-		-	106	15	-	118	10	1½	15	-	3¾	537	19	3½	1	15	3¼
Caps, Forage, Gentlemen Cadets' Servants.	51	1	-¾	2	14	2¼	-	6	5¼		-	-	-	8	1	14	-	2	-	5¼	-	5	1½	4	19	9	-	1	11½
Coats, Dress - ditto - ditto -	49	23	7¾	57	18	7¾	3	8	11¼	7	-	-		-	17	3	-	20	11	11¼	2	12	2½	81	2	9½	1	13	1½
Ditto, Great - ditto - ditto -	35	39	11	69	17	1	1	4	4¼		-	-	2	4	4	8	-	5	6	-¼	-	13	5¼	75	16	6½	2	3	4

No. 11.—Royal Clothing Factory, Woolwich.—Statement (B.) Manufactured Garments—*continued.*

Service and Description.	Number.	Cost of Materials. Rate.	Cost of Materials. Amount.	Labour. Cutting. Amount.	Labour. Making. Rate. By Hand. Civil.	Labour. Making. Rate. By Hand. Military.	Labour. Making. Rate. Machine.	Labour. Making. Amount.	Labour. Total Direct Labour.	Indirect Expenditure.	Total Expenditure.	Rate per Garment.
		s. d.	£. s. d.	£. s. d.	s. d.	s. d.	s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Royal Military Academy—*continued.*												
Jackets, Grey, Gent. Cadets' Servants	49	17 –¾	41 16 –¾	1 14 8½	4 –	–	–	9 16 –	11 10 8½	1 9 2¾	54 16 –	1 2 4½
Trowsers, Dress, ditto - ditto	49	14 11	36 10 11	1 9 5¼	–	–	1 5	3 9 5	4 18 10¼	– 12 6¼	42 2 3½	– 17 2¼
Ditto - Working, Gentlemen Cadets' Servants.	49	12 11¼	31 13 11¼	1 9 5¾	–	–	1 5	3 9 5	4 18 10¾	– 12 6¼	37 5 4¼	– 15 2½
Waistcoats, Gentlemen Cadets' Servants	49	8 11¾	21 19 11¾	1 9 5¼	2 6	–	–	6 2 6	7 11 11¼	– 19 3	30 11 2	– 12 5¾
Cavalry:												
Caps, Forage, Instructors of Musketry, Hussars.	2	8 7	– 17 2	– – 3½	–	–	1 1½	– 2 3	– 2 6½	– – 3¾	1 – –¼	– 10 –
Caps, Forage, Staff Serjeants	1	7 6¼	– 7 6¼	– – –½	–	–	1 1½	– 1 1½	– 1 2	– – 1¾	– 8 10	– 8 10
Ditto - Serjeants	3	7 3¾	1 1 11¼	– – 2¼	–	–	1 1½	– 3 4½	– 3 6¾	– – 5½	1 5 11½	– 8 7¾
Overalls, Booted, Rank and File	36	22 1½	39 16 6	– 7 10¾	–	5 6	–	9 18 –	10 5 10¾	1 6 1	51 8 5¾	1 8 6¾
Ditto - ditto - ditto	19	22 1½	21 – 4½	– 2 7	–	–	3 6	3 6 6	3 9 1	– 8 9	24 18 2½	1 6 2½
Valises (Experimental)	12	8 11	5 7 –	– – 6	–	–	2 6	1 10 –	1 10 6	– 3 10½	7 1 4½	– 11 9¼
Infantry:												
Caps, Forage, 67th Foot, Serjeants	1	2 11¾	– 2 11¾	– –	–	–	1 1½	– 1 1½	– 1 1½	– – 1¾	– 4 3	– 4 3
Ditto - ditto - ditto	54	2 11¼	7 18 7	– 2 5¼	–	–	1 –	2 14 –	2 16 5¼	– 7 1¾	11 2 2	– 4 1¾
Ditto - ditto - Rank and File	1	– 11	– – 11	– – –¾	–	–	– 6½	– – 6½	– – 7¼	– – 1	– 1 7¼	– 1 7¼
Ditto - ditto - ditto	604	– 11	27 13 8	1 – 9¾	–	–	– 7	17 12 4	18 13 1¾	2 7 3½	48 14 1¼	– 1 7¼
Ditto - ditto - Musicians	1	1 –½	– 1 –½	– –	–	–	1 1½	– 1 1½	– 1 1½	– – 1¾	– 2 3¾	– 2 3¾
Ditto - ditto - ditto	4	1 –½	– 4 2	– – 1¼	–	–	1 –	– 4 –	– 4 1¼	– – 6¼	– 8 9½	– 2 2¼
Ditto - 68th Foot, Serjeants	1	2 10½	– 2 10½	– –	–	–	1 1½	– 1 1½	– 1 1½	– – 1¾	– 4 1¾	– 4 1¾
Ditto - ditto - ditto	54	2 10½	7 15 3	– 2 4	–	–	1 –	2 14 –	2 16 4	– 7 1½	10 18 8½	– 4 –½
Ditto - ditto - Rank and File	1	– 11½	– – 11½	– –	–	–	– 8	– – 8	– – 8	– – 1	– 1 8½	– 1 8½
Ditto - ditto - ditto	789	– 11½	37 16 1½	1 7 6¼	–	–	– 7	23 – 3	24 7 9¼	3 1 9¾	65 5 8½	– 1 7¾
Ditto - ditto - Musicians	1	1 1¾	– 1 1¾	– –	–	–	1 1½	– 1 1½	– 1 1½	– – 1¾	– 2 5	– 2 5
Ditto - ditto - ditto	33	1 1¾	1 17 9¾	– 2 4	–	–	1 –	1 13 –	1 15 4	– 4 5¾	3 17 7½	– 2 4¼

Cape Mounted Rifles:																								
Caps, Kepi, Staff	1	3	4¾	–	3	4¾	–	–	3	–	–	1	3	–	1	3	–	1	6	–	–	2¼	–	5	1	–	5	1
Ditto O. R.	476	2	4¾	57	–	5	4	6	4	–	–	1	3	29	15	–	34	1	4	4	6	4	95	8	1	–	4	–
Royal Laboratory:																												
Drawers, Serge	2	2	7	–	5	2	–	–	1¼	–	–	–	7	–	1	2	–	1	3¼	–	–	2	–	6	7¼	–	3	3½
Jackets, Serge	1	8	–¼	–	8	–¼	–	–	1¼	–	–	1	6	–	1	6	–	1	7¼	–	–	2½	–	9	10	–	9	10
Shirts, Serge, Blue	1	7	8¼	–	7	8¼	–	–	1¼	–	–	1	9	–	1	9	–	1	10¼	–	–	2¾	–	9	9¼	–	9	9¼
Ditto White (Men's)	300	2	2	32	10	–	–	4	5¼	–	–	–	6	7	10	–	7	14	5¼	–	19	6¾	41	4	–	–	2	9
Ditto ditto (Boy's)	850	1	10¾	80	11	5½	–	9	3½	–	–	–	6	21	5	–	21	14	3½	2	15	–½	105	–	9½	–	2	5¾
General Service:																												
Shirts, Flannel, Grey	41,132	5	–	10,283	–	–	59	17	4½	–	7	–	–	1,199	13	8	1,259	11	–½	159	11	10¼	11,702	2	10¾	–	5	8¼
Ditto, Cotton, White	20	2	1½	2	2	6	–	1	7¾	–	7	–	–	–	11	8	–	13	3¾	–	1	8¼	2	17	6	–	2	10½
Ditto ditto Striped	20	2	3½	2	5	10	–	1	9	–	7	–	–	–	11	8	–	13	5	–	1	8¼	3	–	11¼	–	3	–½
Partly Cut at Pimlico:																												
Royal Artillery:																												
Capes, for Cloaks	1,000	15	–½	752	1	8	–	8	10¼	–	–	–	7	29	3	4	29	12	2¼	3	15	–¼	785	8	10½	—		
Cloaks	1,000	40	7½	2,031	5	–	2	10	8¾	–	–	2	6	125	–	–	127	10	8¾	16	3	2½	2,174	18	11¼	—		
Coats, Great	3,000	35	11	5,387	10	–	2	6	2½	–	–	2	4	350	–	–	352	6	2½	44	12	9½	5,784	9	–	—		
Jackets, Rank and File	515	12	2¼	313	16	6¾	1	2	9	–	–	2	10	72	19	2	74	1	11	9	7	9¼	397	6	3	—		
Ditto ditto	1,485	12	2¼	904	18	5¼	3	5	7¼	3	3	–	–	241	6	3	244	11	10¼	30	19	9¾	1,180	10	1¼	—		
Overalls, Unbooted, Rank and File	3,000	17	9¾	2,671	17	6	5	4	6	–	–	2	–	300	–	–	305	4	6	38	13	5¾	3,015	15	5¾	—		
Trowsers, Rank and File	14,430	14	7	10,521	17	6	26	6	1½	–	–	1	5	1,022	2	6	1,048	8	7½	132	16	10¼	11,703	2	11¾	—		
Tunics	13,000	16	1¾	10,494	15	10	31	14	–¾	5	–	–	–	3,250	–	–	3,281	14	–¾	415	16	2¾	14,192	6	1½	—		
Royal Engineers:																												
Jackets, Rank and File	361	12	3¼	221	9	9¼	2	12	3½	–	–	2	10	51	2	10	53	15	1½	6	16	2¾	282	1	1½	—		
Ditto ditto	139	12	3¼	85	5	7¾	1	–	1¾	3	3	–	–	22	11	9	23	11	10¾	2	19	9½	111	17	4	—		
Trowsers ditto	2,000	10	9	1,075	–	–	3	6	3¾	–	–	1	5	141	13	4	144	19	7¾	18	7	5	1,238	7	–¾	—		
Tunics ditto	499	16	5½	410	12	8½	4	–	9¾	5	–	–	–	124	15	–	128	15	9¾	16	6	4½	555	14	10¾	—		

No. 11.—Royal Clothing Factory, Woolwich.—Statement (B). Manufactured Garments—*continued.*

Service and Description.	Number.	Cost of Materials. Rate.	Cost of Materials. Amount.	Labour. Cutting. Amount.	Making. Rate. By Hand. Civil.	Making. Rate. By Hand. Military.	Making. Rate. Machine.	Making. Amount.	Total Direct Labour.	Indirect Expenditure.	Total Expenditure.	Rate per Garment.
		s. d.	£. s. d.	£. s. d.	s. d.	s. d.	s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Military Train:												
Trowsers, Rank and File - - -	1,140	13 10	788 10 –	1 13 8½	–	–	1 5	80 15 –	82 8 8½	10 8 10¾	881 7 7¼	—
Militia Artillery:												
Jackets, Rank and File - - -	1,729	12 3½	1,062 12 3½	7 1 1¼	–	–	2 10	244 18 10	251 19 11¼	31 18 7	1,346 10 9¾	—
Ditto ditto - - -	221	12 3½	135 16 5½	– 18 –½	3 3	–	–	35 18 3	36 16 3½	4 13 3	177 6 –	—
Tunics, ditto - - -	1,130	16 2½	915 15 5	5 5 2½	5 –	–	–	282 10 –	287 15 2½	36 9 2¾	1,239 19 10¼	—
For Colonial Government of Victoria:												
Coats, Great (without shoulder straps and buttons).	3,900	35 10½	6,995 12 6	1 19 3½	–	–	2 2	422 10 –	424 9 3½	53 15 7¾	7,473 17 5¼	1 18 4
Royal Artillery:												
Coats, Great, O. R. - - - -	505	–	21 11 9¼	– 1 10	–	–	2 4	58 18 4	59 – 2	7 9 6½	88 1 5¾	—
Trowsers, Rank and File - - -	2,517	–	21 – 11½	– 5 3	–	–	1 5	178 5 9	178 11 –	22 12 8	222 4 7½	—
Tunics, ditto - - -	2,062	–	79 15 5	– 17 8	5 –	–	–	515 10 –	516 7 8	65 8 9¼	661 11 10¼	—
Total - - - £.			96,045 2 5¾	621 2 8½	–	–	–	16,620 16 2½	17,241 18 11	2,185 – 9¼	115,472 2 2	—

Examined, *James C. Hurst,*
Accountant, and Auditor to the Manufacturing Departments.

G. W. Taylor,
Manager and Inspector of Clothing, R. A. and R. E.

No. 11.—Royal Clothing Factory, Woolwich—*continued.*

STATEMENT (C.)—Repairs and Alterations.

Service and Description.	Number.	Nature of Work Performed.	Cost of Materials.	Labour: Cutting and Trimming, &c.	Labour: Piece Work. Rate.	Labour: Piece Work. Amount.	Labour: Total Direct Labour.	Indirect Expenditure.	Total Expenditure.
			£. s. d.	£. s. d.	s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Badges, Worsted, M. S. S. C.	30	Altered	- - -	- - ¾	-	- -	- - ¾	- - ¼	- - 1
Caps, Forage, Serjeants, Cavalry	3	- ditto	- 2 4¼	- -	- 4	- 1 -	- 1 -	- - 1½	- 3 5¾
Ditto - Staff Serjeants, R. A.	1	- ditto	- 3 11	- -	- 1½	- - 1½	- - 1½	- - -¼	- 4 -¾
Ditto - Staff and Serjeants (O. P.)	2	- ditto	- - 1¾	- -	- -½	- - 1	- - 1	- - -¼	- - 3
Ditto - - - ditto	1	- ditto	- 3 11	- -	- 1½	- - 1½	- - 1½	- - -¼	- 4 -¾
Ditto - Serjeants (O. P.)	1	- ditto	- - 9¾	- -	- 4	- - 4	- - 4	- - -½	- 1 2¼
Ditto - - ditto	1	- ditto	- 4 1	- -	- 1½	- - 1½	- - 1½	- - -¼	- 4 2¾
Ditto - Rank and File, R. A. and R. E.	198	Re-blocked	- - -	- -	- -½	- 8 3	- 8 3	- 1 -½	- 9 3½
Ditto - - ditto	382	Altered	1 7 -	- 1 3½	- 1½	2 7 9	2 9 -½	- 6 2½	4 2 3
Ditto - - ditto M. A.	24	Re-blocked	- - -	- -	- -½	- 1 -	- 1 -	- - 1½	- 1 1½
Ditto - Serjeants, 68th Regiment	7	Altered	- - -	- -	- 2	- 1 2	- 1 2	- - 1¾	- 1 3¾
Ditto - Band, 68th Regiment	9	- ditto	- - 1	- -	- 10	- 7 6	- 7 6	- - 11¼	- 8 6¼
Capes, for Cloaks, R. A.	12	Re-buttoned	- - 2¼	- -	- -½	- - 6	- - 6	- - -¾	- - 9
Cloaks, Drivers', R. A.	14	- ditto	- 1 9½	- -	- 1½	- 1 9	- 1 9	- - 2¾	- 3 9¼
Coats, Great, O. R., R. A.	371	- ditto	2 18 9½	- -	- 1½	2 6 4½	2 6 4½	- 5 10½	5 11 -½
Ditto - ditto	1,488	Inspected	- -	8 19 6¾	-	- -	8 19 6¾	1 2 9	10 2 3¾
Ditto - ditto	3	Repaired	- - 1	- -	1 -	- 3 -	- 3 -	- - 4½	- 3 5½
Ditto - ditto Rifle	1	Altered	- - 1	- - -¾	- 1½	- - 1½	- - 2¼	- - -¼	- - 3½
Frocks, Serge, Staff Serjeants, R. M. F. A.	1	- ditto	- 3 11½	- -	1 -	- 1 -	- 1 -	- - 1½	- 5 1
Ditto - Serjeants, R. M. F. A.	1	- ditto	- 3 9¼	- -	1 -	- 1 -	- 1 -	- - 1½	- 4 10¾
Ditto - Rank and File, R. M. F. A.	1	- ditto	- - 6	- -	1 -	- 1 -	- 1 -	- - 1½	- 1 7½
Ditto - N. Z. Pattern, R. M. F. A.	1	- ditto	- - -½	- -	- 9	- - 9	- - 9	- - 1¼	- - 10¾
Jackets, Staff Serjeants, R. A.	2	Altered and Repaired	2 5 8¼	- -	4 6	- 9 -	- 9 -	- 1 1½	2 15 9¾
Ditto - ditto	4	- ditto	4 2 1	- -	4 3	- 17 -	- 17 -	- 2 1¾	5 1 2¾
Ditto, Rank and File, R. A.	9	Altered	3 - 6½	- - 10¼	-	- -	- - 10¼	- - 1¼	3 1 6
Ditto - ditto	1	- ditto	- 6 1	- -	1 10	- 1 10	- 1 10	- - 2¾	- 8 1¾
Ditto - ditto	10	Altered and Repaired	1 6 7¼	- -	1 3	- 12 6	- 12 6	- 1 7	2 - 8¼
Ditto - ditto	83	Altered and Re-buttoned	- 17 10¾	- - 3¾	- 1½	- 10 4½	- 10 8¼	- 1 4¼	1 9 11¼
Ditto, Rank and File, R. E.	8	Repaired	- 14 2½	- 1 9	1 6	- 12 -	- 13 9	- 1 9	1 9 8½
Ditto - ditto	8	Altered	1 13 10¾	- - 5	- 7½	- 5 -	- 11 5	- 1 5½	2 6 9¼
Ditto - ditto	7	- ditto			- 6	- 3 6			
Ditto - ditto	1	- ditto			2 6	- 2 6			

No. 11.—Royal Clothing Factory, Woolwich—Statement (C.) Repairs and Alterations—*continued.*

Service and Description.	Number.	Nature of Work Performed.	Cost of Materials.	Labour: Cutting and Trimming, &c.	Labour: Piece Work. Rate.	Labour: Piece Work. Amount.	Labour: Total Direct Labour.	Indirect Expenditure.	Total Expenditure.
			£. s. d.	£. s. d.	s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Jackets, Staff Serjeants, M. A.	1	Altered	– 1 6½	– – –	– 5	– – 5	– – 5	– – –½	– 2 –
Ditto, Serjeants, M. A.	1	Ditto	– – –¼	– – –	– 5	– – 5	– – 5	– – –½	– – 5¾
Ditto, Rank and File, M. A.	2	Altered and Repaired	– – 4¼	– – –	1 3	– 2 6	– 2 6	– – 3¾	– 3 2
Overalls, Unbooted, Rank and File, R. A.	1	Repaired	– – –½	– – 1¼	1 –	– 1 –	– 1 1¼	– – 1¾	– 1 3½
Ditto ditto ditto	4	Ditto	– – 1¼	– – –	0 10	– 3 4	– 3 4	– – 5	– 3 10¼
Ditto ditto ditto	36	Repaired and Altered	– 2 6¾	– – –	– 8	2 4	1 4 –	– 3 –½	1 9 7¼
Ditto, Booted, Cavalry, and Artillery	19	Altered	– 15 2	– – 1¼	– 6	– 9 6	– 9 7¼	– 1 2½	1 5 11¾
Shirts, Serge, Royal Laboratory	810	Ditto	1 10 10¾	– – –	– –½	1 13 9	1 13 9	– 4 3½	3 8 11¼
Shabracques, 6th Dragoons	145	Ditto	– 4 11½	– 5 11½	– 11	6 12 11	6 18 10½	– 17 7¼	8 1 5¼
Trousers, Rank and File, R. A.	4	Repaired	– 14 9¾	– – 10½	1 –	– 4 –	– 4 10½	– – 7¼	1 – 3½
Ditto ditto ditto	12	Ditto	– – 3	– – –	– 9	– 9 –	– 9 –	– 1 1½	– 10 4½
Ditto ditto ditto	2	Altered	– – –½	– – –	– 6	– 1 –	– 1 –	– – 1½	– 1 2
Ditto, Serge, O. R., R. A.	181	Ditto	2 11 2½	– – 3½	– 6	4 10 6	4 10 9½	– 11 6	7 13 6
Ditto ditto ditto	1,681	Ditto	3 2 9	– – –	– 5	35 – 5	35 – 5	4 8 9	42 11 11
Ditto, Rank and File, R. E.	2	Altered and Repaired	– 9 7¾	– – 1¼	– 8½	– 1 5	– 1 6¼	– – 2¼	– 11 4¼
Ditto ditto ditto	3	Ditto	– 7 –¼	– – 7½	– 1	– 3 –	– 3 7½	– – 5½	– 11 1¼
Ditto, Serge, O. R., R. E.	107	Repaired	– 5 11	– – –	– 5	2 4 7	2 4 7	– 5 7¾	2 16 1¾
Ditto ditto ditto	3	Re-striped	– 1 –¾	– – –	– 5	– 1 3	– 1 3	– – 2	– 2 5¾
Ditto, Staff and Serjeants, M. A.	37	Altered	– 11 11¼	– – –	– 6	– 18 6	– 18 6	– 2 4	1 12 9¼
Ditto, Rank and File, M. A.	70	Ditto	10 13 10	– – –	– 8	2 6 8	2 6 8	– 5 11	13 6 5
Ditto ditto ditto, Infantry	149	Ditto	8 13 6¾	– 4 11	– 7	4 6 11	5 17 4	– 14 10½	15 5 9¼
Ditto ditto ditto - ditto	51	Ditto			– 6	1 5 6			
Ditto ditto ditto - ditto	950	Ditto	17 14 6½	– 14 11¼	– 7	27 14 2	28 9 1¼	3 12 1¾	49 15 9¼
Ditto, Serge, O. R., Infantry	1,681	Ditto	55 15 8½	– 16 5½	– 11	77 – 11	77 17 4½	9 17 4	143 10 5
Ditto (Men's), Royal Laboratory	90	Ditto	– – 9¾	– – 5¼	– 1	– 7 6	– 7 11¼	– 1 –	– 9 9
Ditto, Gentlemen Cadets	20	Ditto	– 2 3¼	– 3 3¾	– 7	– 11 8	– 14 11¾	– 1 10¾	– 19 1¾
Ditto ditto ditto	108	Ditto	1 9 7¼	1 7 11¼	– 8	3 12 –	6 12 5¼	– 16 9½	8 18 10
Ditto ditto ditto	60	Ditto			– 6½	1 12 6			
Ditto ditto ditto	188	Ditto	– 9 1	1 10 8¾	2 5	22 14 4	24 7 10¼	3 1 9¾	27 18 9
Ditto ditto ditto	1	Ditto			2 9½	– 2 9½			
Ditto ditto ditto	38	Ditto	– 5 7¾	– 10 7½	– 4	– 12 8	2 1 2½	– 5 2¾	2 12 1
Ditto ditto ditto	12	Ditto			– 10½	– 10 6			
Ditto ditto ditto	10	Ditto			– 4½	– 3 9			
Ditto ditto ditto	4	Ditto			– 11	– 3 8			
Ditto ditto ditto	20	Re-made	– 5 11½	– 3 2½	3 –	3 – –	3 3 2½	– 8 –	3 17 2

Tunics, Master Gunners, R. A.	2	Altered and Repaired	2 15 5¾	- - -	7 -	- 14 -	- 14 -	- 1 9	3 11 2¾
Ditto Staff Serjeants, 2nd class, R. A.	3	Altered	- 15 8½	- - -	1 6	- 4 6	- 4 6	- - 8¾	1 - 11¼
Ditto Serjeants, R. A.	2	Altered and Repaired	2 2 11½	- - -	3 6	- 7 -	- 7 -	- - 10½	2 10 10
Ditto Rank and File, R. A.	159	Altered	7 17 7	- 1 6	1 9	13 18 3	13 19 9	1 15 5½	23 12 9½
Ditto - - - ditto	1	Ditto			5 -	- 5 -			
Ditto - - - ditto	1	Ditto	1 6 8	- - -	2 6	- 2 6	- 9 6	- 1 2¼	1 17 4¼
Ditto - - - ditto	1	Ditto			2 -	- 2 -			
Ditto - - - ditto	3	Ditto	- 2 2½	- - -	1 -	- 3 -	- 3 -	- - 4½	- 5 7
Ditto - - - ditto	1	Ditto			- 9	- - 9			
Ditto - - - ditto	2	Ditto	- 1 9¾	- - -	1 6	- 3 -	- 3 9	- - 5½	- 6 -¼
Ditto - - - ditto	2	Ditto	- 1 11¾	- - -	2 -	- 4 -	- 4 -	- - 6	- 6 5¾
Ditto Rank and File, R. E.	1	Ditto	- 1 1½	- - -¾	- 6	- - 6	- - 6¾	- - -¾	- 1 9
Ditto - - - ditto	4	Repaired	- 2 9	- - 8	1 8	- 6 8	- 7 4	- - 11	- 11 -
Ditto - - - ditto	4	Re-laced	- 1 10½	- - 2½	1 8	- 6 8	- 6 10½	- - 10¼	- 9 7¼
Ditto - - - ditto	5	Repaired	- - 1¼	- - -	2 -	- 10 -	- 10 -	- 1 3	- 11 4¼
Ditto Rank and File, M. A.	23	Altered	2 1 4	- - -	2 -	2 6 -	2 6 -	- 5 10	4 13 2
Ditto Gentlemen Cadets	96	Ditto	3 - -½	1 12 10¼	2 1	10 - -	11 12 10¼	1 9 6	16 2 4¾
Ditto - - ditto	2	Altered to R. U. Officers	1 13 3½	- - -	5 6	- 11 -	- 11 -	- 1 4½	2 5 8
Ditto - - ditto	5	Ditto to S. U. Officers	2 11 8½	- - -	2 9	- 13 9	- 13 9	- 1 8¾	3 7 2¼
Ditto - - ditto	24	Ditto to Corporals	7 8 5¼	- - -	1 6	1 16 -	1 16 -	- 4 6½	9 8 11¾
Ditto - - ditto	120	Altered			1 6	9 - -			
Ditto - - ditto	48	Ditto	1 10 8¾	2 16 6¼	1 8	4 - -	15 16 6¼	2 - 1¼	19 7 4¼
Ditto - - ditto	19	Re-made	12 11 7	- 6 -	7 -	6 13 -	6 19 -	- 17 7½	20 8 2½
Ditto - - ditto	60	- - - - -	- - -	- - -	- 10	2 10 -			
Ditto - - ditto	16	- - - - -	- - -	- - -	- 9	- 12 -			
Ditto - - ditto	20				1 1	1 1 8			
Ditto - - ditto	54	Re-altered	2 1 8¾	3 14 8	1 -½	2 16 3	14 - 3	1 15 6¼	17 17 6
Ditto - - ditto	34	- - - - -	- - -	- - -	1 -	1 14 -			
Ditto - - ditto	40	- - - - -	- - -	- - -	- 9½	1 11 8			
Ditto Gentlemen Cadets, R. U. O.	1	Altered	- 1 -	- - 4	6 6	- 6 6	- 6 10	- - 10½	- 8 8½
Ditto - - ditto S. U. O.	7	Ditto	- - 7½	- 2 2	6 6	2 5 6	2 7 8	- 6 -½	2 14 4
Ditto - - ditto Corporals	25	Ditto	- 1 1¾	- 8 2¼	6 6	8 2 6	8 10 8¼	1 1 7½	9 13 5½
Ditto - - ditto Ordinary	156	Ditto	- 8 7½	2 9 -¼	6 6	50 14 -	53 3 -¼	6 14 8½	60 6 4¼
Valises, Officers, R. A.	4	Ditto	- - 4¾	- - -	- 6	- 2 -	- 2 -	- - 3	- 2 7¾
Ditto - ditto	1	Ditto	- - 2	- - -	- 3	- - 3	- - 3	- - -¼	- - 5¼
Ditto Officers	2				2 -	- 4 -	- 4 -	- - 6	
Ditto - ditto	17	Repaired and Lengthened	1 16 8¼	- - -	1 -	- 17 -	- 17 -	- 2 1¾	3 - 4
Ditto Cavalry (Experimental)	12	Altered	- 6 5¼	- - -	- 3	- 3 -	- 3 -	- - 4½	- 9 9¾
		TOTAL £.	177 14 -	26 17 1½	-	335 11 7½	362 8 9	45 18 5½	586 1 2½

Examined,

James C. Hurst,
Accountant, and Auditor to the Manufacturing Departments.

J. W. Taylor,
Manager and Inspector of Clothing,
Royal Artillery and Royal Engineers.

No. 11.—Royal Clothing Factory, Woolwich.

STATEMENT (D.)—Garments Issued in Material.

Service and Description.	Number.	Cost of Materials. Rate.	Cost of Materials. Amount.	Direct Labour: Cutting.	Indirect Expenditure.	Total Cost.	Rate per Garment.
		s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Royal Horse Artillery:							
Jackets:							
Dress:							
Staff Serjeants, 1st Class	9	107 2¾	48 5 -¾	- 1 2¼	- - 1¾	48 6 4¾	5 7 4½
Ditto - 2nd Class	21	102 9	107 17 9	- 2 2½	- - 3¼	108 - 2¾	5 2 10¼
Trumpet Majors	3	111 2¾	16 13 8¼	- - 6¼	- - -¾	16 14 3¼	5 11 5
S. A. I. in Gunnery	3	109 10¾	16 9 8¼	- - 6¼	- - -¾	16 10 3¼	5 10 1
Serjeants	126	96 7	608 9 6	- 10 4½	- 1 3¾	609 1 2¼	4 16 8
Rank and File	97	16 2¼	78 10 2¼	- 6 5	- - 9¾	78 17 5	- 16 8
Undress	32	13 -½	20 17 4	- 2 5	- - 3¾	21 - -¾	- 13 1½
Royal Artillery:							
Jackets:							
Staff Serjeants, 1st Class	4	45 5½	9 1 10	- - 7	- - 1	9 2 6	2 5 7½
Trumpet Majors	2	41 8	4 3 4	- - 3¾	- - -½	4 3 8¼	2 1 10
S. A. I. in Gunnery, 2nd Class.	4	41 -	8 4 -	- - 6	- - -¾	8 4 6¾	2 1 1½
Battery Staff Serjeants	12	32 6¼	19 10 3	- 1 3	- - 2	19 11 8	1 12 7½
Serjeants	54	21 6¾	58 4 4½	- 3 1	- - 4¾	58 7 10¼	1 1 7½
Rank and File	721	12 7	453 12 7	1 13 6	- 4 3	455 10 4	- 12 7½
Tunics:							
Master Gunners	14	43 7½	30 10 9	- 1 2¾	- - 1¾	30 12 1½	2 3 8½
Staff Serjeants, 1st Class	46	58 4¾	134 6 2½	- 7 2	- - 11	134 14 3½	2 18 6½
Ditto - 2nd Class	7	52 11	18 10 5	- - 10¾	- - 1¼	18 11 5	2 13 -¼
S. A. I. in Gunnery, 1st Class	12	64 7	38 15 -	- 1 6¼	- - 2¼	38 16 8½	3 4 8½
Ditto - ditto 2nd Class	26	60 3	78 6 6	- 4 1¼	- - 6¼	78 11 1½	3 - 5
Trumpet Majors	14	61 1½	42 15 9	- 2 3	- - 3½	42 18 3½	3 1 3¾
Battery, Staff Serjeants	148	47 2½	349 6 10	- 17 3	- 2 2¼	350 6 3¼	2 7 4
Serjeants	748	45 5	1,698 11 8	4 9 9	- 11 4½	1,703 12 9½	2 5 6½
Band Boys	19	30 8¼	29 3 -¾	- 2 4¼	- - 3½	29 5 8½	1 10 10
Rank and File	1,074	16 9	899 9 6	3 9 6¾	- 8 9¾	903 7 10½	- 16 10
Trousers:							
Staff Serjeants, Serjeants, and Musicians.	1,919	16 -½	1,539 3 11½	9 5 1	1 3 5½	1,549 12 6	- 16 1¾
Band Boys	19	15 4½	14 12 1½	- 2 4¼	- - 3½	14 14 9¼	- 15 6¼
Rank and File	1,918	15 1½	1,450 9 9	3 11 -¾	- 9 -¼	1,454 9 10	- 15 2
Tartan, O. R.	19	8 7	8 3 1	- - 9	- - 1¼	8 3 11¼	- 8 7½
Serge, Staff Serjeants	25	12 8¾	15 18 2¾	- 1 6½	- - 2¼	15 19 11½	- 12 9½
Ditto O. R.	413	6	138 19 1¾	- 8 -½	- 1 -¼	139 8 2½	- 6 9
Badges, Good Conduct:							
Gold	117	- 9	4 7 9	- - 2½	- - -¼	4 7 11¾	- - 9
Worsted	70	- -¾	- 4 4½	- - 2½	- - -¼	- 4 7¼	- - -¾
Overalls, Unbooted:							
Rank and File	230	19 -	218 10 -	- 12 1	- 1 6¼	219 3 7¼	- 19 -¾
Staff and Serjeants	458	19 8¾	451 15 11½	1 11 5¼	- 4 -	453 11 4¾	- 19 9¾
Royal Engineers:							
Tunics:							
Staff Serjeants	30	75 7	113 7 6	- 2 6½	- - 3¾	113 10 4	3 15 8
Colour Serjeants	33	51 1¼	84 6 5¼	- 3 3½	- - 5	84 10 1¾	2 11 2½
Serjeants	230	49 1	564 9 2	1 1 8	- 2 8¾	565 13 6¾	2 9 2¼
Rank and File	286	17 5½	249 13 1	- 14 7¼	- 1 10¼	250 9 6½	- 17 6
Band Master	1	114 9¾	5 14 9¾	- - 1¼	- - -¼	5 14 11¼	5 14 11¼
Bugle Major	1	162 7½	8 2 7½	- - 1¼	- - -¼	8 2 9	8 2 9
Band Serjeant	1	105 8¼	5 5 8¼	- - 1¼	- - -¼	5 5 9¾	5 5 9¾
Musicians	32	73 11¾	118 7 4	- 1 8¾	- - 2½	118 9 3¼	3 14 -½
Jackets:							
Colour Serjeants	25	23 1	28 17 1	- 2 9¼	- - 4½	29 - 2¾	1 3 2½
Serjeants	188	20 10½	196 4 6	- 15 2¼	- 1 11	197 1 7¼	1 - 11½
Rank and File	260	12 11¾	168 14 7	- 10 -	- 1 3¼	169 5 10¼	- 13 -½
Trousers:							
Staff Serjeants, Uniform	30	18 3¾	27 9 4½	- 1 8½	- - 2½	27 11 3½	- 18 4½
Ditto - Working, and Serjeants, Uniform.	281	15 1¾	212 15 11¾	- 18 3½	- 2 3¾	213 16 7	- 15 2½
Serjeants, Working	184	11 9¾	108 13 6	11 9¾	- 1 5¾	109 6 9½	- 11 10½
Rank and File	483	11 2½	270 13 7½	- 12 8½	- 1 7¼	271 7 11¼	- 11 2½

No. 11.—Royal Clothing Factory, Woolwich—Statement (D.) Garments issued in Material—*continued.*

Service and Description.	Number.	Cost of Materials. Rate.	Cost of Materials. Amount.	Direct Labour: Cutting.	Indirect Expenditure.	Total Cost.	Rate per Garment.
		s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Royal Engineers—*continued.*							
Trousers—*continued.*							
Band, Staff, and Serjeants	3	30 8½	4 12 1⅓	– – 3¼	– – –½	4 12 5¼	1 11 9¾
Musicians	32	34 7½	55 8 –	– 1 6	– – 2¼	55 9 8¼	1 14 8
Serjeants' Working, R. E. T.	2	15 3¼	1 10 6½	– – 3½	– – –½	1 10 10½	– 15 5¼
Overalls, Unbooted, Serjeants' Working, R. E. T.	20	19 3	19 5 –	– – 11	– – 1½	19 6 –½	– 19 3¾
Coats, Frock, Staff Serjeants	33	24 3¾	40 2 3¾	– 2 11¼	– – 4½	40 5 7½	1 4 5
Frocks, Serge:							
Colour Serjeants	2	24 1½	2 8 3	– – 2¼	– – –¼	2 8 5½	1 4 2¾
Serjeants	5	21 9¾	5 9 –¾	– – 6	– – –¾	5 9 7½	1 1 11
Rank and File	3	11 2¾	1 13 8¼	– – 2¾	– – –¼	1 13 11¼	– 11 3¾
Military Train:							
Tunics:							
Serjeant Major	1	36 2¼	1 16 2¼	– – 1¾	– – –¼	1 16 4¼	1 16 4¼
Staff Serjeants	21	34 8¾	36 9 3¾	– 1 8¾	– – 2½	36 11 3	1 14 9¾
Serjeants	10	20 1	10 – 10	– – 6½	– – –¾	10 1 5¼	1 – 1¾
Rank and File	118	15 9½	93 3 5	– 5 2½	– – 8	93 9 3½	– 15 10
Jackets	160	11 8	93 6 8	– 6 5¾	– – 10	93 13 11¾	– 11 8½
Overalls, Booted:							
Staff Serjeants	13	23 2¾	15 1 11¾	– – 9¾	– – 1¼	15 2 10¾	1 3 3¾
Serjeants	5	22 7	5 12 11	– – 4	– – –½	5 13 3½	1 2 8
Rank and File	32	22 5	35 17 4	– 1 4¾	– – 2	35 18 10¾	1 2 5½
Overalls, Unbooted:							
Staff Serjeants	9	19 7¾	8 16 9¾	– – 7¾	– – 1	8 17 6½	– 19 8¾
Serjeants	5	19 1½	4 15 7½	– – 3½	– – –½	4 15 11½	– 19 2¼
Rank and File	82	18 10¼	77 6 –½	– 3 2	– – 4¾	77 9 7¼	– 18 10¾
Trousers:							
Staff Serjeants	10	15 9¾	14 4 7½	– – 10½	– – 1¼	14 5 7¼	– 15 10½
Serjeants	10	15 –¾	7 10 7½	– – 4	– – –½	7 11 –	– 15 1¼
Rank and File	102	14 10½	75 17 3	– 7 5½	– – 11½	76 5 8	– 14 11½
Duck	195	2 10¼	27 16 6¾	– 3 11	– – 6	28 – 11¾	– 2 10¾
Waistcoats, Serge	62	2 10¾	8 19 6½	– – 7¼	– – 1	9 – 2¾	– 2 11
Military Store, Staff Corps:							
Tunics:							
Serjeant Major	1	48 1	2 8 1	– – 7	– – 1	2 8 9	2 8 9
Storeholders, 1st Class	8	41 10¼	16 14 10	– 2 8½	– – 4	16 17 10½	2 2 2¾
Ditto 2nd "	8	39 9¾	15 18 6	– 2 8½	– – 4	16 1 6½	2 – 2¼
Rank and File	6	19 3¾	5 15 10½	– – 9¼	– – 1¼	5 16 9	– 19 5½
Jackets:							
Storeholder, 3rd Class	9	22 10¾	10 6 –¾	– – 10¼	– – 1¼	10 7 –¼	1 3 –
Serjeants	2	20 3	2 – 6	– – 3	– – –½	2 – 9½	1 – 4¾
Rank and File	90	12 7¾	56 18 1½	– 3 10½	– – 5¾	57 2 5¾	– 12 8¼
Militia Artillery:							
Tunics:							
Staff Serjeants	12	54 4¾	32 12 9	– 1 2¾	– – 1¾	32 14 1½	2 14 6
S. A. I. in Gunnery	4	57 10½	11 11 6	– – 4¼	– – –½	11 11 10¾	2 17 11¾
Trumpet Majors	5	58 9	14 13 9	– – 6¼	– – –¾	14 14 4	2 18 10½
Company Serjeants	23	43 3¾	49 16 2¼	– 4 9½	– – 7¼	50 1 7	2 3 6½
Serjeants	36	41 2	74 2 –	– 4 6½	– – 7	74 7 1½	2 1 3¾
Trumpeters	24	17 7¼	21 2 6	– 4 9½	– – 7¼	21 7 10¾	– 17 10
Jackets:							
Staff Serjeants	1	42 6½	2 2 6½	– – 1	– – –¼	2 2 7¾	2 2 7¾
Company Serjeants	1	22 4½	1 2 4½	– – 1¾	– – –¼	1 2 6½	1 2 6½
Serjeants	4	21 6¼	4 6 1	– – 5¼	– – –¾	4 6 7	1 1 7¾
Total £.			11,743 11 3¾	37 17 9	4 16 –¼	11,786 5 1	—

G. W. Taylor,
Manager and Inspector of Clothing,
Royal Artillery and Royal Engineers.

Examined,
James C. Hurst,
Accountant, and Auditor to the Manufacturing Departments.

No. 11.—Royal Clothing Factory, Woolwich—*continued.*

STATEMENT (E.)—Receipts from Storekeeper.

Service and Description.	Number.	Cost of Materials. Rate.	Cost of Materials. Amount.	Direct Labour: Making. Rate.	Direct Labour: Making. Amount.	Indirect Expenditure.	Total Expenditure.	Rate per Garment.
		s. d.	£. s. d.	s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Royal Horse Artillery:								
Jackets:								
Dress, Serjeants - - -	25	6 7½	120 15 7½	8 –	10 – –	1 5 4	132 – 11½	5 5 7½
Royal Artillery:								
Tunics:								
Staff Serjeants, 1st Class - -	7	57 6¾	20 2 11¼	10 –	3 10 –	– 8 10½	24 1 9¾	3 8 10
S. A. I. in Gunnery, 1st Class -	1	65 5½	3 5 5½	10 3	– 10 3	– 1 3½	3 17 –	3 17 –
Ditto - ditto - 2nd Class	2	60 3¾	6 – 7½	9 3	– 18 6	– 2 4¼	7 1 5¾	3 10 8¾
Trumpet Majors - - -	1	61 7½	3 1 7½	9 3	– 9 3	– 1 2	3 12 –½	3 12 –½
Battery Staff Serjeants - -	14	46 4	32 8 8	6 9	4 14 6	– 11 11¾	37 15 1¾	2 13 11¼
Serjeants - - - -	85	44 2	187 14 2	6 6	27 12 6	3 10 –¼	218 16 8¼	2 11 6
Rank and File - - -	94	16 1½	75 15 9	5 –	23 10 –	2 19 6¾	102 5 3¾	1 1 9
Trousers:								
Staff Serjeants and Serjeants -	210	15 7¼	163 16 10½	1 9	18 7 6	2 6 6¾	184 10 11¼	– 17 7
Rank and File - - -	124	14 5	89 7 8	1 5	8 15 8	1 2 3¼	99 5 7¼	– 16 –
Overalls, Unbooted:								
Staff Serjeants and Serjeants -	48	19 9	47 8 –	2 2	5 4 –	– 13 2	53 5 2	1 2 2¼
Rank and File - - -	30	18 2½	27 6 3	2 –	3 – –	– 7 7¼	30 13 10¼	1 – 5½
Royal Engineers:								
Tunics:								
Staff Serjeants - - -	1	72 9¼	3 12 9¼	10 –	– 10 –	– 1 3¼	4 4 –½	4 4 –½
Colour Serjeants - - -	1	50 1¾	2 10 1¾	6 9	– 6 9	– – 10½	2 17 9	2 17 9
Serjeants - - - - -	1	48 1¾	2 8 1¾	6 6	– 6 6	– – 9¾	2 15 5½	2 15 5½
Coats, Frock:								
Staff Serjeants - - - -	2	24 4½	2 8 9	8 –	– 16 –	– 2 –¼	3 6 9¼	1 13 4½
Trousers:								
Staff Serjeants, Uniform - -	2	18 2½	1 16 5	1 9	– 3 6	– – 5¼	2 – 4¼	1 – 2
Serjeants - - ditto - -	4	13 11	2 15 8	1 9	– 7 –	– – 10¾	3 3 6¾	– 15 10½
Ditto Working - - -	2	11 6	1 3 –	1 5	– 2 10	– – 4¼	1 6 2¼	– 13 1
Jackets:								
Colour Serjeants - - -	1	22 6½	1 2 6½	4 1½	– 4 1½	– – 6¼	1 7 2¼	1 7 2¼
Serjeants - - - -	1	21 6	1 1 6	4 –	– 4 –	– – 6	1 6 –	1 6 –
Army Hospital Corps:								
Tunics:								
Rank and File - - -	6	17 2	5 3 –	5 –	1 10 –	– 3 9¾	6 16 9¾	1 2 9½
Trousers:								
Rank and File - - -	6	14 4½	4 6 3	1 5	– 8 6	– 1 –¾	4 15 9¾	– 15 11½
General Service:								
Shirts:								
Flannel, Grey - - - -	400	5 –	100 – –	– 7	11 13 4	1 9 6¾	113 2 10¾	– 5 8
Total - - - £.			905 11 10	–	123 4 8½	15 12 3½	1,044 8 10	—

G. W. Taylor,
Manager and Inspector of Clothing,
Royal Artillery and Royal Engineers.

Examined,
James C. Hurst,
Accountant, and Auditor to the Manufacturing Departments.

No. 11.—Royal Clothing Factory, Woolwich—*continued.*

STATEMENT (F.)—Garments Issued, Cut Out.

Service and Description.	Number.	Cost of Materials. Rate.	Cost of Materials. Amount.	Direct Labour: Cutting.	Indirect Expenditure.	Total Expenditure.	Rate per Garment.
		s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Diagrams of White Cotton Shirts	3	1 9¾	– 5 5¼	- -	- -	– 5 5¼	– 1 9¾
Leathers for Forage Caps:							
Scarlet - - - - -	438	– 1¾	3 3 10½	– 4 11¼	– – 7½	3 9 5¼	– – 2
Black - - - - -	343	– 2¼	3 4 3¾	– 6 2½	– – 9¼	3 11 3½	– – 2½
Stripes for Trousers:							
Staff Serjeants - - -	10	1 9¼	– 17 8½	– – –¾	– – –¼	– 17 9½	– 1 9½
Serjeants - - - - -	40	1 4½	2 15 –	– – 2	– – –¼	2 15 2¼	– 1 4½
Letters, Cloth, Valise - - -	7,000	1 6½ per 100	5 7 11	– 9 4¼	– 1 2¼	5 18 5½	– 1 9 per 100.
Total - - - £.			15 14 3	1 – 8¾	– 2 7½	16 17 7¼	—

Examined,
James C. Hurst,
Accountant, and Auditor to the Manufacturing Departments.

G. W. Taylor,
Manager and Inspector of Clothing,
Royal Artillery and Royal Engineers.

STATEMENT (G.)—Semi-Manufactured Garments, on Stock.

Service and Description.	Number.	Cost of Materials. Rate.	Cost of Materials. Amount.	Direct Labour: Cutting.	Indirect Expenditure.	Total Expenditure.
Caps, Kepi:		s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Cape, Mounted Rifles, Staff -	6	3 6¼	1 1 1½	– 1 3	– – 2	1 2 6½
Ditto - ditto O. R. -	67	2 4½	7 19 1½	– 12 1	– 1 6¼	8 12 8¾
Total - - - £.			9 – 3	– 13 4	– 1 8¼	9 15 3¼

Examined,
James C. Hurst,
Accountant, and Auditor to the Manufacturing Departments.

G. W. Taylor,
Manager and Inspector of Clothing,
Royal Artillery and Royal Engineers.

— No. 12. —

ROYAL SMALL ARMS FACTORY, BIRMINGHAM.

(A.)—BALANCE SHEET, No. 1, of the Royal Small Arms Factory, Birmingham, from 1st April 1867 to 31st March 1868.

Dr.

	£. s. d.	£. s. d.
To Balance:		
For Stores in Stock - - - - -	- -	8,704 8 2½
To Army Supplies, 1867-8—For Cash advanced through the Paymaster General, and expended on the following Services:		
Salaries, including servants' allowance and lodging - -	1,069 1 5	
Pay of Surgeon - - - -	65 16 8	
Wages - - - - - - -	11,690 2 11	
Wages, Corps of Armourer Serjeants	2,407 11 9	
Sick Pay - - - - - -	76 4 10½	
Stores, Materials, &c., by purchase and contract - - - - -	1,811 16 3	
Miscellaneous Services - - -	250 19 2	
Police - - - - - - -	171 12 –	
Schools - - - - - - -	5 – –	
Military Pay of Officers - - -	238 – –	
Military Pay of Non-commissioned Officers and Gunners - - -	130 7 9	
Superannuation - - - -	189 18 5	
Forage and Shoeing - - -	28 19 4½	
New Works and Alterations - -	612 3 1½	
Repairs to Buildings - - -	116 – –	
Rent, Gas, and Water - - -	128 13 8	
		18,992 7 4½
To Miscellaneous Services, 1867-8—Expenditure not defrayed out of Army Supplies:		
Stationery - - - - - -	- -	54 19 2
To Sundry Departments, 1867-8:		
For Stores received from various Sources:		
Enfield - - - - - -	2,056 7 7½	
Woolwich - - - - -	274 3 10	
Tower - - - - - -	148 7 8½	
Sundry Stations - - -	1,015 11 11½	
		3,494 11 1½
	£.	31,246 5 10½

	£. s. d.	£. s. d.
By Balance:		
For Stores in Stock on 31st March 1868 - - - - - - -	- -	9,478 15 10½
By Production Account, viz:		
Miscellaneous Services performed, *vide* Statement (C.) - - - -	2,187 1 5½	
Sundry Arms re-stocked, *vide* Statement (D.) - - - - -	860 17 3	
Sundry Arms thoroughly repaired, *vide* Statement (E.) - -	5,063 4 9	
Sundry Arms cleaned and slightly repaired, *vide* Statement (F.) - -	758 14 3½	
Sundry Arms repaired for Regiments, Volunteers and Militia, *vide* Statement (G.) - - - - -	3,808 12 3½	
Sundry Swords repaired, *vide* Statement (H.) - - - - -	863 19 –½	
Sundry Scabbards repaired, *vide* Statement (I.) - - - - -	40 4 2½	
Sundry Materials fitted to Arms, *vide* Statement (J.) - - - -	407 7 11½	
Sundry Miscellaneous Articles repaired and operations performed, *vide* Statement (K.) - - -	3,338 8 10¾	
		17,328 10 1
By Sundry Departments:		
For Stores issued during 1867-8 -	- -	61 8 8½
By Pay to Corps of Armourer Serjeants and Candidates, including Training and Barrel Instruction, viz:		
Pay - - - - - - -	2,844 18 3¾	
Earnings, calculated at Piece-work Rates - - - - - -	608 4 6	
	2,236 13 9¾	
Stores supplied for purposes of Instruction - - - - -	90 4 4½	
		2,326 18 5
By Pay to Apprentices, including Training and Instruction, viz:		
Pay - - - - - - -	1,143 15 9	
Earnings, calculated at Piece-work Rates - - - - -	412 17 9	
	730 18 –	
Stores supplied for purposes of Instruction - - - -	51 11 10½	
		782 9 10½
By Sundry Services performed for Volunteers on Re-payment - - -	- -	
By Sundry Unserviceable Stores sold -	- -	
	£.	31,

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

H. T. Arbuthnot, Brevet Major, R. A.,
Assistant Superintendent.

No. 12.—Royal Small Arms Factory, Birmingham—*continued.*

(B.)—BALANCE SHEET, No. 2, of the Royal Small Arms Factory, Birmingham, from 1st April 1867 to 31st March 1868.

Dr.

	£. s. d.	£. s. d.
To Balance:		
For Stores in Stock - - - - -	- -	8,704 8 2½
To Army Supplies, 1867-8—For Cash advanced through the Paymaster General, and expended on the following Services:		
Salaries - - - - - - -	1,069 1 5	
Pay of Surgeon - - - -	65 16 8	
Wages - - - - - - -	11,690 2 11	
Wages, Corps of Armourer Serjeants	2,407 11 9	
Sick Pay - - - - - -	76 4 10½	
Stores, Materials, &c., by Purchase and Contract - - - -	1,811 16 3	
Miscellaneous Services - - -	250 19 2	
Police - - - - - - -	171 12 –	
Schools - - - - - - -	5 – –	
Military Pay of Officers - - -	238 – –	
Military Pay of Non-Commissioned Officer and Gunners - - -	130 7 9	
Superannuation - - - -	189 18 5	
Forage and Shoeing - - -	28 19 4½	
New Works and Alterations - -	612 3 1½	
Repairs to Buildings - - -	116 – –	
Rent, Gas, and Water - - -	128 13 8	
		18,992 7 4½
To One Year's Interest, at 3½ per Cent., on Invested Capital:	£. s. d.	
Buildings and Land -	9,847 1 3	
Machinery - -	754 1 –	
Miscellaneous Plant	1,482 3 2	
Stores in Stock on 1st April 1867 -	8,704 8 2½	
TOTAL - -	£. 20,787 13 7½	727 11 4
To One Year's Interest on Working Capital, viz., one fifth of the Net Annual Expenditure, say 22,096 *l.* 4 *s.* 2 *d.* -		154 13 6
To Depreciation, viz., 5 per Cent. on Buildings and Miscellaneous Plant, 10 per Cent. on Machinery - -		536 17 3
		1,419 2 1
To Miscellaneous Services—Expenditure not defrayed out of Army Supplies:		
Stationery - - - - -	- -	54 19 2
To Sundry Departments, 1867-8:		
For Stores received from various Sources:		
Enfield - - - - - -	2,056 7 7½	
Woolwich - - - - -	274 3 10	
Tower - - - - - -	148 7 8½	
Sundry Stations - - -	1,015 11 11½	
		3,494 11 1½
	£.	32,665 7 11½

	£. s. d.	£. s. d.
By Balance:		
For Stores in Stock on 31st March 1868 - - - - - - -	- -	9,478 15 10½
By Production Account, viz:		
Miscellaneous Services performed, *vide* Statement (C.) - - - -	2,366 8 2½	
Sundry Arms re-stocked, *vide* Statement (D.) - - - - -	931 9 1	
Sundry Arms thoroughly repaired, *vide* Statement (E.) - - -	5,478 8 5	
Sundry Arms cleaned and slightly repaired, *vide* Statement (F.) -	820 18 6½	
Sundry Arms repaired for Regiments, Volunteers and Militia, *vide* Statement (G.) - - - -	4,120 18 4½	
Sundry Swords repaired, *vide* Statement (H.) - - - - -	934 15 10½	
Sundry Scabbards repaired, *vide* Statement (I.) - - - -	43 10 1½	
Sundry Materials fitted to Arms, *vide* Statement (J.) - - -	440 16 1½	
Sundry Miscellaneous Articles repaired, *vide* Statement (K.) -	3,610 7 5½	
		18,747 12 2
By Sundry Departments;		
Stores issued during 1867-8 - -	- -	61 8 8½
By Pay to Corps of Armourer Serjeants and Candidates, including Training and Barrel Instruction, viz.:		
Pay - - - - - - -	2,844 18 3¾	
Earnings, calculated at Piece-work Rates - - - - -	608 4 6	
	2,236 13 9¾	
Stores supplied for purposes of Instruction - - - - -	90 4 4½	
		2,326 18 2½
By Pay to Apprentices, including Training and Instruction, viz:		
Pay - - - - - - -	1,143 15 9	
Earnings, calculated at Piece-work Rates - - - - -	412 17 9	
	730 18 –	
Stores supplied for purposes of Instruction - - - - -	51 11 10½	
		782 9 10½
By Sundry Services performed for Volunteers on Re-payment - - -	- -	822 9 8½
By Sundry Unserviceable Stores sold -	- -	445 13 5½
	£.	32,665 7 11½

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

H. T. Arbuthnot, Brevet Major, R.A.,
Assistant Superintendent.

W. M. Dixon,
Colonel and Superintendent.

No. 12.—ROYAL SMALL ARMS FACTORY, BIRMINGHAM—*continued.*

(C.)—STATEMENT of MISCELLANEOUS SERVICES performed at the ROYAL SMALL ARMS DEPARTMENT, BIRMINGHAM, from 1st April 1867 to 31st March 1868.

Number.	DESCRIPTION.	Wages.	Stores.	Indirect Expenditure.	TOTAL as per Balance Sheet, No. 1.	TOTAL as per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
—	Sundry Journeys of Viewers to Inspect Arms of Regiments	99 16 –	- - -	136 12 1*	236 8 1	255 15 9
19	Sets of Fittings for Pannier Boxes Order, 1 August 1867 (57—24—4501.)	1 4 –	– 10 –	– 8 –	2 2 –	2 5 6
20	Forges, Armourers, N. P., "Dodd's" Order, 12 August 1867 (7350—1251.)	120 – –	387 14 2	39 16 10	547 11 –	592 9 –
6	Forges, Armourers, N. P., "Dodd's" Order, 17 September 1867 (7350—1419.)	36 – –	116 6 3	11 19 –	164 5 3	177 14 7
—	Sundry Swords and Miscellaneous Materials; viewed during the Year	11 16 6	- - -	3 18 6	15 15 –	17 – 10
7,600	Pistols viewed for Indian Government (including Stocks and Chests supplied)	433 5 4½	597 5 7	143 16 11	1,174 7 10½	1,270 13 10½
—	Sundry Spare Parts for the above Pistols; viewed for India Government	19 4 –	1 16 –	6 7 6	27 7 6	29 12 5
200	Pistols, Revolving; viewed for Dublin Metropolitan Police Order, 27 March 1868 (203—972.)	8 – –	3 8 5	2 13 1	14 1 6	15 4 7
2,000	Butt Slips for Arm Chests; made for Smallheath	– 15 –	4 3 4	– 4 11	5 3 3	5 11 8
	£.	730 – 10½	1,111 3 9	345 16 10	2,187 1 5½	2,366 8 2½

* Including travelling expenses.

Examined,
James C Hurst,
Accountant, and Auditor to Manufacturing Departments.

(D.)—STATEMENT of ARMS RE-STOCKED and FINISHED, from 1st April 1867 to 31st March 1868.

Number	DESCRIPTION.	Wages.	Stores.	Indirect Expenditure.	TOTAL as per Balance Sheet, No. 1.	TOTAL as per Balance Sheet, No. 2.
		£. s. d	£. s. d.	£. s. d.	£. s. d.	£. s. d.
132	Muskets, Pattern 1853, re-stocked and finished complete with Materials - -	110 1 1	35 13 11	36 10 9	182 5 9	197 4 8
140	Naval Rifles - - - ditto - - - ditto - - - -	117 1 3	34 13 –	38 17 3	190 11 6	206 4 1
200	Ditto - - - - ditto - - - ditto - - - -	145 9 8	38 10 –	48 6 –	232 5 8	251 6 8
4	Short Rifles - - - ditto - - - ditto - - - -	3 6 4	1 1 7½	1 2 –	5 9 11½	5 18 11½
51	Marine Artillery - - ditto - - - ditto - - - -	42 12 11	12 12 5¼	14 3 2	69 8 6¼	75 2 4¼
22	Carbines, Artillery - - ditto - - - ditto - - - -	17 15 2	4 8 8¾	5 17 11	28 1 9¾	30 7 10¾
28	Ditto, Lancaster - - ditto - - - ditto - - - -	23 4 2	6 16 –¼	7 14 2	37 14 4¼	40 16 2¼
1	Ditto, Cavalry - - ditto - - - ditto - - - -	– 15 5	– 4 1½	– 5 1	1 4 7½	1 6 7½
1	Ditto, W. Richards' - ditto - - - ditto - - - -	1 1 7	– 3 11¼	– 7 2	1 12 8¼	1 15 4¼
185	Pistols, Colt's - - - ditto - - - ditto - - - -	82 5 3	2 10 10½	27 6 3	112 2 4½	121 6 3½
	£.	543 12 10	136 14 8	180 9 9	860 17 3	931 9 1

Examined,
James C. Hurst,
Accountant, and Auditor to Manufacturing Departments.

No. 12.—Royal Small Arms Factory, Birmingham—*continued.*

(E.)—STATEMENT of Arms Thoroughly Repaired, from 1st April 1867 to 31st March 1868.

Number.	DESCRIPTION.	Wages.	Stores.	Indirect Expenditure.	TOTAL as per Balance Sheet, No. 1.	TOTAL as per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
171	Muskets, Pattern 1853, thoroughly repaired, and new Inter-stocks fitted - -	47 10 5½	68 3 8	15 15 6	131 9 7½	142 5 2½
34	Ditto - - - - - - - - ditto - - - ditto - Barrels fitted - -	7 14 5	22 16 7	2 11 3	33 2 3	35 16 7
30	Carbines, Cavalry - - - - ditto - - - ditto - Stocks fitted - -	6 7 7	10 18 8	2 2 4	19 8 7	21 – 5
1	Ditto Artillery - - - - ditto - - - - and new Barrel fitted - -	– 10 2½	– 12 5	– 3 5	1 6 –½	1 8 2½
1	Short Rifle - - - - - - - ditto - - - - - ditto - - - - -	– 5 10	1 6 1	– 1 11	1 13 10	1 16 7
5,313	Muskets, Pattern 1853 - - ditto - - and completed with Materials - -	1,604 19 4½	316 11 4	532 17 –	2,454 7 8½	2,655 12 10½
39	Short Rifles - - - - - - - ditto - - - - - - ditto - - - - -	11 8 1½	1 8 7	3 15 9	16 12 5½	17 19 9½
489	Naval Rifles - - - - - - - ditto - - - - - - ditto - - - - -	146 10 9	29 2 8	48 13 –	224 6 5	242 14 4
753	Marine Artillery - - - - - ditto - - - - - - ditto - - - - -	225 13 –	44 17 3	74 18 4	345 8 7	373 15 1
2,274	Carbines ditto - - - - - - ditto - - - - - - ditto - - - - -	631 19 8	104 4 6	209 16 5	946 – 7	1,023 12 1
851	Ditto Lancaster, Sappers - ditto - - - - - - ditto - - - - -	236 10 1½	42 18 1	78 10 5	357 18 7½	387 5 7½
8	Ditto Cavalry - - - - - ditto - - - - - - ditto - - - - -	1 19 1	– 5 10	– 13 –	2 17 11	3 2 8
83	Pistols, Dean's - - - - - - ditto - - - - - - ditto - - - - -	30 1 9	– 15 3	9 19 10	40 16 10	44 3 10
1,162	Ditto Colt's - - - - - - ditto - - - - - - ditto - - - - -	348 4 3	10 13 –	115 12 1	474 9 4	513 7 5
55	Ditto Cavalry - - - - - - ditto - - - - - - ditto - - - - -	9 8 8½	– 5 1	3 2 8	12 16 5½	13 17 5½
2	Ditto ditto Carbine Butt, thoroughly repaired and completed with Materials -	– 6 10	– – 5	– 2 3	– 9 6	– 10 3
	£.	3,309 10 2	654 19 5	1,098 15 2	5,063 4 9	5,478 8 5

Examined,
James C. Hurst,
Accountant, and Auditor to Manufacturing Departments.

(F.)—STATEMENT of ARMS SLIGHTLY REPAIRED, from 1st April 1867 to 31st March 1868.

Number.	DESCRIPTION.	Wages.	Stores.	Indirect Expenditure.	TOTAL as per Balance Sheet, No. 1.	TOTAL as per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
855	Muskets, Pattern 1853, slightly repaired, and new Inter-stocks fitted	79 10 11¾	274 6 3	26 8 2	380 5 4¾	411 9 –¾
1	Naval Rifle - ditto - ditto	– 1 10¼	– 6 2½	– – 8	– 8 8¾	– 9 4¾
25	Carbines, Artillery - ditto - ditto	1 7 9½	8 5 –	– 9 3	10 2 –½	10 18 7½
18	Ditto - Cavalry - ditto - ditto	1 – –	5 16 3¾	– 6 8	7 2 11¾	7 14 8¾
22	Ditto - ditto - Cleaned, and slightly Repaired	1 12 11	– 4 –¼	– 10 11	2 7 10¼	2 11 9¼
68	Ditto - W. Richards - ditto - ditto	4 17 –	– 12 5½	1 12 3	7 1 8½	7 13 3½
86	Ditto - Artillery - ditto - ditto	6 8 10	– 15 9¼	2 2 9	9 7 4¼	10 2 8¼
2	Muskets, Pattern 1853, - ditto - ditto	– 3 1½	– – 4¼	– 1 –	– 4 5¾	– 4 9¾
78	Pistols, Colt's - - ditto - ditto	11 13 9	– 7 1½	3 17 7	15 18 5½	17 4 7½
3,252	Muskets, Pattern 1853, Cleaned	94 6 2	14 18 1	31 6 3	140 10 6	152 – 11
1	Carbines, Artillery - ditto	– – 7	– – 1	– – 2	– – 10	– – 11
200	Ditto - Lancaster - ditto	1 18 8	– 18 4	– 12 10	3 9 10	3 15 7
111	Stocks, Musket, Pattern 1853, Inter-Exchanged and Furniture refitted	3 4 4	35 2 1	1 1 4	39 7 9	42 12 4
13	Lances, Cavalry, thoroughly Repaired	1 7 8	– 4 9	– 9 2	2 1 7	2 5 –
1	Ditto - ditto - ditto and new Spear fitted	– 2 –	– 9 8½	– – 8	– 12 4½	– 13 4½
263	Pikes, Boarding, altered from old Pattern	24 3 –	1 4 1¼	8 – 4	33 7 5¼	36 2 2¼
8	Axes - ditto - Re-stocked and finished	– 12 5	– 2 2¼	– 4 2	– 18 9¼	1 – 4¼
21	Axes - ditto - Repaired and Polished	1 – 4	– 1 11	– 6 9	1 9 –	1 11 4
968	Muskets, Pattern 1853, Butts shortened and new Heelplates fitted	59 13 1	24 8 –¼	19 16 1	103 17 2¼	112 7 6¼
	£.	293 4 6	368 2 9¼	97 7 –	758 14 3¼	820 18 6¼

Examined,
James C. Hurst,
Accountant, and Auditor to Manufacturing Departments.

No. 12.—Royal Small Arms Factory, Birmingham—*continued.*

(G.)—STATEMENT of Volunteer and Regimental Arms Repaired, from 1st April 1867 to 31st March 1868.

Number.	DESCRIPTION.	Wages.	Stores.	Indirect Expenditure.	TOTAL as per Balance Sheet, No. 1.	TOTAL as per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
11	Muskets, Pattern 1853, re-stocked and finished	9 3 4½	2 19 6	3 – 11	15 3 9½	16 8 8½
1	Carbine, Artillery - - ditto	– 16 1	– 4 –	– 5 4	1 5 5	1 7 6
1	Ditto - restocked and new Barrel fitted	1 – 1	– 15 7	– 6 8	2 2 4	2 5 10
1	Pistol, Cavalry, re-stocked and finished	– 11 2	– 1 2	– 3 8	– 16 –	– 17 4
1	Musket, Pattern 1853, thoroughly repaired and new Inter-stock fitted	– 5 6½	– 8 –	– 1 10	– 15 4½	– 16 7½
1	Carbine, Artillery - - - ditto - - - - ditto	– 5 6½	– – 11	– 1 10	– 8 3½	– 8 11½
2	Muskets, Pattern 1853, Snider's, new Barrels and actions fitted	– 5 –½	2 17 9	– 1 8	3 4 5½	3 9 9½
2	Ditto - - - ditto new Barrels fitted	– 5 –½	1 10 3	– 1 8	1 16 11½	1 19 11½
263	Ditto - - - - - - ditto	97 4 10½	188 12 10½	32 5 9	318 3 6	344 5 4
16	Carbines, Artillery, new Barrels fitted	6 – 3	11 19 10	2 – –	20 – 1	21 12 11
3	Ditto Lancaster, Sappers, ditto	– 8 2¾	4 9 2	– 2 8	5 – –¾	5 8 2¾
2	Short Rifles - - - ditto	– 5 5½	2 10 10	– 1 10	2 18 1½	3 2 10½
5	Muskets, Pattern 1853, 2nd Class, new Barrels fitted	– 11 7	2 6 –⅓	– 3 10	3 1 5½	3 6 6½
17,188	Ditto - - ditto slightly repaired and rebrowned	1,744 11 7	236 6 8	579 4 –	2,560 2 3	2,770 – 10
915	Short Rifles, slightly repaired and rebrowned	92 17 6	12 11 7	30 16 8	136 5 9	147 9 3
323	Marine, Artillery - ditto - - ditto	32 15 8	4 8 10	10 17 9	48 2 3	52 1 2
3,874	Carbines, ditto - ditto - - ditto	393 4 3	53 5 4	130 10 11	577 – 6	624 6 10
644	Ditto Lancaster, Sappers - - ditto	65 7 4	8 17 1¾	21 14 –	95 18 5¾	103 15 7¾
2	Muskets, Pattern 1853, slightly repaired	– 2 –	– – 4½	– – 8	– 3 –½	– 3 5⅓
517	Rifles engraved	7 10 –	- - -	2 9 9	9 19 9	10 16 1
14	Locks repaired	– 5 5	– 5 2	– 1 9	– 12 4	– 13 4
1	New Sword Bayonet and Scabbard, fitted Short Rifle	– – 7	– 11 6	– – 2	– 12 3	– 13 3
1	Muskets, Pattern 1853, Snider's, slightly repaired	– – 7	– – 1	– – 2	– – 10	– – 11
2	Barrels, Pattern 1853 - - ditto - - ditto	– 2 4	– – 2¼	– – 9	– 3 3¼	– 3 6¼
113	Bayonets, Pattern 1853, slightly repaired and rebrowned	1 12 9	– 10 5	– 10 11	2 14 1	2 18 6
4	Scabbards, Artillery, repaired and polished	– 2 11	– – 4½	– 1 –	– 4 3½	– 4 7½
10	Barrels, Pattern 1853, slightly repaired	– 5 10	– – 11	– 2 –	– 8 9	– 9 5
5	New Bayonets and Scabbards fitted, Pattern 1853	– – 6	1 7 11	– – 2	1 8 7	1 10 11
	£.	2,456 1 6¼	537 2 5	815 8 4	3,808 12 3¼	4,120 18 4¼

Examined,
James C. Hurst,
Accountant, and Auditor to Manufacturing Departments.

(H.)—STATEMENT of SWORDS, &c., REPAIRED, from 1st April 1867 to 31st March 1868.

Number.	DESCRIPTION.	Wages.	Stores.	Indirect Expenditure.	TOTAL as per Balance Sheet, No. 1.	TOTAL as per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
288	Swords, Cavalry, repaired, repolished, Grips releathered, and N. P. Hilts fitted -	45 18 9	89 15 2	15 5 –	150 18 11	163 6 5
114	Ditto - - - - - - ditto - - and Grips releathered - - - - -	8 5 4	9 13 4	2 14 11	20 13 7	22 7 6
5	Ditto, Claymores - ditto - - and new trimmings fitted - - - -	– 16 11	– 19 3	– 5 7	2 1 9	2 5 2
215	Ditto, Serjeants, repaired and repolished - - - - - - - - -	9 7 1	– 19 9	3 2 1	13 8 11	14 11 7
41	Ditto - ditto - rifle, repaired and repolished - - - - - - - -	1 15 8	– 3 9	– 11 11	2 11 4	2 15 6
14	Ditto, Staff Serjeants - - ditto - - - - - - - - - -	– 12 2	– 1 3¼	– 4 1	– 17 6¼	– 18 11¼
16	Ditto, Pioneers - - - - ditto - - - - - - - - - -	– 13 11	– 1 5½	– 4 7	– 19 11½	1 1 6½
12	Ditto, Drummers - - - ditto - - - - - - - - - -	– 10 5	– 1 1¼	– 3 6	– 15 –¼	– 16 2¼
3	Ditto, Band - - - - - ditto - - - - - - - - - -	– 2 7	– – 3¼	– – 10	– 3 8¼	– 3 11¼
53	Ditto, Sea Service - - - ditto - - - - - - - - - -	2 11 3	– 4 10¼	– 17 –	3 13 1¼	3 19 1¼
36	Ditto - ditto - practice, repaired - - - - - - - - -	1 – 11	– 3 3½	– 6 11	1 11 1½	1 13 7½
3	Ditto, Staff Serjeants, with Scabbards, repaired and repolished - - - -	– 4 9½	– – 3¼	– 1 8	– 6 8¾	– 7 2¾
8	Ditto, Cavalry, with Scabbards, repaired, repolished, and relined - - -	1 4 9	– 14 8	– 8 3	2 7 8	2 11 7
245	Sword Bayonets, Artillery, with Scabbards, repaired - - - - - - -	39 1 7	10 7 9¼	12 19 6	62 8 10¼	67 11 3¼
1,438	Ditto - - ditto - Grips releathered, springs and bolts repaired - - -	111 4 1	60 19 3¾	36 18 5	209 1 9¾	226 4 8¾
845	Ditto - - Marine Artillery, Grips releathered, springs and bolts repaired -	71 9 5½	35 16 5¾	23 14 7	131 – 6¼	141 15 4¼
846	Ditto - - Naval Rifle - - - ditto - - - - ditto - - -	75 12 11	42 13 –½	25 2 3	143 8 2½	155 3 4½
2	Ditto - - - ditto - - - - ditto - - and new Hilts fitted - -	– 5 4	– 4 9¼	– 1 10	– 11 11¼	– 12 10¼
35	Ditto - - Short Rifle - - - ditto - - springs and bolts repaired -	2 14 1	1 9 8	– 17 11	5 1 8	5 10 –
744	Ditto - - Carbine, Lancaster - ditto - - - - ditto - - -	57 10 9	31 10 10¼	19 2 1	108 3 8¼	117 1 1¼
31	Ditto - - Artillery - - - - ditto - - - - - -	1 9 11	1 5 7	– 9 11	3 5 5	3 10 9
2	Ditto - - Carbine, Lancaster, repaired and repolished - - - -	– 1 5	– – 2¼	– – 5	– 2 –¼	– 2 1¼
3	Ditto - - Artillery - - - - ditto - - - - - - -	– 2 1½	– – 3¼	– – 8	– 3 –¾	– 3 3¾
3	Ditto - - Short Rifles, slightly repaired - - - - - - - -	– 1 9	– – 3¼	– – 6	– 2 6¼	– 2 8¼
	£.	432 17 11½	287 6 7¾	143 14 5	863 19 –¼	934 15 10¼

Examined,
James C. Hurst,
Accountant, and Auditor to Manufacturing Departments.

No. 12.—Royal Small Arms Factory, Birmingham—*continued.*

(I.)—STATEMENT of Scabbards Repaired, from 1st April 1867 to 31st March 1868.

Number.	DESCRIPTION.	Wages.	Stores.	Indirect Expenditure.	TOTAL as per Balance Sheet, No. 1.	TOTAL as per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
139	Scabbards, Cavalry, thoroughly repaired and repolished	10 1 6	– 6 4½	3 6 11	13 14 9½	14 17 3½
98	Ditto - - slightly - - - ditto	5 4 2	– 4 6	1 14 7	7 3 3	7 15 –
37	Scabbards, Serjeants, repaired and repolished	1 19 4	– 1 8½	– 13 1	2 14 1½	2 18 6½
60	Ditto - Short Rifle - - ditto	1 17 8	– 2 9	– 12 6	2 12 11	2 17 3
3	Ditto - Staff Serjeants - ditto	– 2 2½	– – 2	– – 9	– 3 1½	– 3 4½
24	Ditto - Serjeants - - ditto	– 17 4	– 1 1	– 5 9	1 4 2	1 6 2
4	Ditto - Drummers - - ditto	– 2 11	– – 2¼	– – 11	– 4 –¼	– 4 4¼
1	Ditto - Serjeant, Artillery, ditto	– – 8½	– – –½	– – 3	– 1 –	– 1 1
37	Ditto - Carbine, Lancaster, ditto	1 3 3½	– 1 8½	– 7 9	1 12 9	1 15 5
19	Ditto - Artillery - - ditto	– 13 9½	– – 10½	– 4 7	– 19 3	1 – 10
4	Ditto - Pioneers - - ditto	– 2 11	– – 2¼	– – 11	– 4 –¼	– 4 4¼
1,706	Ditto - Bayonet, repaired	4 2 6	3 18 2	1 7 5	9 8 1	10 3 6
11	Ditto - - ditto - repaired and new tips fitted	– – 6¼	– 2 –	– – 2	– 2 8½	– 2 11½
	£.	26 8 10½	4 19 9	8 15 7	40 4 2½	43 10 1½

Examined,
James C. Hurst,
Accountant, and Auditor to Manufacturing Departments.

(J.)—STATEMENT of MATERIALS Fitted, from 1st April 1867 to 31st March 1868.

Number.	DESCRIPTION.	Wages.	Stores.	Indirect Expenditure.	TOTAL as per Balance Sheet, No. 1.	TOTAL as per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
15	New Backsights fitted, Artillery	- - -	2 11 7	- - -	2 11 7	2 15 10
5	Ditto - ditto - Short Rifle	- - -	- 18 9½	- - -	- 18 9½	1 - 3½
6	Ditto - ditto - Marine Artillery	- - -	1 2 6½	- - -	1 2 6½	1 4 4½
1	Ditto - ditto - Carbine, Lancaster	- - -	- 3 9	- - -	- 3 9	- 4 1
1,488	New Worms fitted to Nipple Wrenches	- - -	15 6 10¾	- - -	15 6 10¾	16 12 -¾
111	New Ball Drawers fitted to Nipple Wrenches	- - -	1 5 5¼	- - -	1 5 5¼	1 7 6¼
91	New Piercers - - - ditto	- - -	- 14 7¼	- - -	- 14 7¼	- 15 9¼
1	New Inter Stock fitted	- - -	- 6 4	- - -	- 6 4	- 6 10
80	Marine Artillery new Sword Bayonets and Scabbards fitted	2 6 5	46 4 -	- 15 5	49 5 10	53 6 8
18	New Bayonets fitted, Pattern 1853	- - -	3 19 2¼	- - -	3 19 2¼	4 5 8¼
541	New Scabbards fitted, Naval Rifle	- - -	109 2 -½	- - -	109 2 -½	118 - 11½
608	Ditto - ditto - Marine Artillery	- - -	83 12 -	- - -	83 12 -	90 9 2
4	New Sword Bayonets fitted, Marine Artillery	- - -	1 15 2¼	- - -	1 15 2¼	1 18 1¼
55	New Scabbards fitted, Cavalry	- - -	19 13 3	- - -	19 13 3	21 5 6
45	Ditto - ditto - Short Rifle	- - -	6 3 9	- - -	6 3 9	6 13 11
1	New Sword Bayonets and Scabbards fitted, Short Rifle	- - -	- 11 6½	- - -	- 11 6½	- 12 5½
53	Dttto - - ditto - - - Artillery	- - -	30 12 2	- - -	30 12 2	33 2 4
427	New Scabbards fitted, Carbine, Lancaster	- - -	64 11 8	- - -	64 11 8	69 17 7
2	New Rammers fitted, Marine Artillery	- - -	- 1 7¾	- - -	- 1 7¾	- 1 8¾
11	Ditto - ditto - Artillery	- - -	- 9 1	- - -	- 9 1	- 9 10
80	New Backsights fitted, Pattern 1853	- - -	15 - 8	- - -	15 - 8	16 5 5
	£.	2 6 5*	404 6 1½	- 15 5	407 7 11½	440 16 1½

* The wages expended under this head are included in the general repair of the arms or materials referred to.

Examined,
James C. Hurst,
Accountant, and Auditor to Manufacturing Departments.

No. 12.—Royal Small Arms Factory, Birmingham—*continued.*

(K.)—STATEMENT of Miscellaneous Articles Repaired, from 1st April 1867 to 31st March 1868.

Number.	DESCRIPTION.	Wages	Stores.	Indirect Expenditure.	TOTAL as per Balance Sheet, No. 1.	TOTAL as per Balance Sheet, No. 2.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
34	Cramps, Mainspring, repaired	– 1 8	– – 9¼	– – 6	– 2 11¼	– 3 2¼
5,987	Stoppers, Muzzle, repaired, and new Discs fitted	14 9 4½	27 8 9¼	4 16 1	46 14 2¾	50 10 9¾
1,440	Ditto - - altered from old pattern, and new Discs fitted	5 4 5	8 5 –	1 14 8	15 4 1	16 9 –
6,426	Ditto - - repaired	15 10 7	7 7 3	5 3 2	28 1 –	30 7 –
2,491	Ditto - - altered from old pattern	9 – 7¼	5 14 1¾	3 – –	17 14 9	19 3 10
168	Ditto - - cleaned	– – 11	– 1 6½	– – 3	– 2 8½	– 2 11½
15,220	Snap Caps fitted with N. P. Leathers and Chains	18 7 10	87 3 11½	6 2 1	111 13 10½	120 17 1½
59	Ditto - re-leathered	– 1 4¾	– 4 –½	– – 5	– 5 10¼	– 6 4¼
84,844	Ditto - altered to fit Breach loading Arms	24 12 2	1 18 10½	8 3 5	34 14 5½	37 11 3½
24,400	Leathers for Snap Caps, altered to fit Breach loading Arms	7 1 6	– 5 7	2 7 –	9 14 1	10 10 –
1,556	Jaggs, Brass, repaired	3 15 2	– 2 10	1 5 –	5 3 –	5 11 5
6	Flasks, Powder, repaired and varnished	– 3 5	– – 1½	– 1 1	– 4 7½	– 5 –½
8	Moulds, Bullet, repaired	– 1 6	– – 2	– – 6	– 2 2	– 2 4
1	Wrenches, Nipple, Dean's, repaired	– – 1	– – –¼	– – –¼	– – 1½	– – 1¾
1	Ditto - - Colt's - ditto	– – 1	– – –¼	– – –¼	– – 1½	– – 1¾
6	Ditto - - slightly repaired	– – 2	– – 1½	– – –½	– – 4	– – 4¼
25	Ditto - - cleaned	– – 7¼	– – 3¼	– – 2¼	– 1 –¾	– 1 1¾
86	Ball Drawers repaired	– 2 –½	– 1 2¼	– – 8	– 3 10¾	– 4 2¾

792	Worms repaired	– 19 1	– 4 4¼	– 6 4	1 9 9¼	1 12 2¼
6,881	Wrenches, Nipple, repaired	24 19 –¾	2 16 9	8 5 9	36 1 6¾	39 – 8¾
53	Rods, cleaning, Pistol, Cavalry, slightly repaired	– 2 6½	– – 6½	– – 10	– 3 11	– 4 3
2,213	Barrels, Pattern 1853, slightly repaired and re-browned	101 12 3½	5 1 5	33 14 9	140 8 5½	151 18 9½
4,246	Bayonets - ditto	20 10 5	2 6 8¼	6 10 3	29 13 4¼	32 2 –¼
3,526	Mainsprings reduced, Pistols, Cavalry	42 12 1	4 – 9½	14 2 11	60 15 9½	65 15 6½
2	Bayonets, Pattern 1853, repaired	– – 2½	– – –½	– – –¾	– – 3¾	– – 4
15,211	Muskets - ditto - Sights altered	441 2 4	34 17 1½	146 9 –	622 8 5½	673 9 2½
6	Short Rifles - - ditto	– 3 6	– – 3½	– 1 2	– 4 11½	– 5 4½
546	Naval Rifles - - ditto	15 16 8	1 5 –	5 5 2	22 6 10	24 3 6
1,053	Marine Artillery - ditto	30 10 9	2 8 3½	10 2 9	43 1 9½	46 12 5½
42,435	Arms received into store, counted, stripped, and examined for classification	820 8 8	23 6 9	272 7 6	1,116 2 6	1,207 12 11
10,697	Arms, Shot, at range	363 12 1	128 12 8	120 14 4	612 19 1	663 4 4
579	Re-stocked Arms, packed and issued	2 16 –	– 13 2¾	– 18 7	4 7 9¾	4 14 11¾
9,964	Repaired - ditto - ditto	48 3 2	11 8 4	15 19 9	75 11 3	81 15 2
5,315	Arms for Conversion - ditto	25 13 9	2 18 5	8 10 7	37 2 9	40 3 8
5,177	Reserve Arms - - ditto	25 – 5	2 16 11	8 6 2	36 3 6	39 2 10
1,466	Arms for India Store Department, packed and issued	7 1 8	– 16 –	2 7 –	10 4 8	11 1 6
27,575	Regimental and Volunteer Arms - ditto	149 4 5½	15 17 5¾	53 16 10½	218 18 9¾	235 1 3¾
	£.	2,219 2 3	378 5 9¼	741 – 10½	3,338 8 10¾	3,610 7 5¾

Examined,
James C Hurst,
Accountant, and Auditor to Manufacturing Departments.

No. 12—Royal Small Arms Factory, Birmingham—*continued.*

(L.)—CAPITAL ACCOUNT of the Royal Small Arms Factory, Birmingham, 1867-8.

Dr.

	£. s. d.	£. s. d.
To Amounts charged below in accordance with a Valuation made at this Department, viz. :—		
Land - - - - - - - - - -	2,100 – –	
Buildings - - - - - - - - -	7,747 1 3	
Machinery - - - - - - - - -	754 1 –	
Miscellaneous Plant - - - - - - -	1,482 3 2	
		12,083 5 5
	£.	12,083 5 5

Cr.

	£. s. d.	£. s. d.
By Productions, 1867-8, One Year's Depreciation on Plant, &c. viz. :		
5 per cent. on Buildings, £. 7,747. 1. 3. - -	387 7 1	
5 per cent. on Miscellaneous Plant, £. 1,482. 3. 2.	74 2 1	
10 per cent. on Machinery, £. 754. 1. - - -	75 8 1	
		536 17 3
By Balance for Net Amount of Capital on 31st March 1868, viz. :—		
Land - - - - - - - - -	2,100 – –	
Buildings - - - - - - -	7,359 14 2	
Machinery - - - - - - - -	678 12 11	
Miscellaneous Plant - - - - - -	1,408 1 1	
		11,546 8 2
	£.	12,083 5 5

H. W. S. Whiffin,
Chief Auditor of Army Accounts.

H. T. Arbuthnot,
Brevet Major, Royal Artillery, and Assistant Superintendent.
W. M. Dixon, Col., Superintendent.

ARMY (MANUFACTURING ESTABLISHMEN

RETURN of the ANNUAL ACCOUNTS of the several MANUFACTURING ESTABLISHMETS under the WAR OFFICE, for the Year 1867–8 (in continuation of Parliamentary Paper, No. 115, of Session 1867–8.

(*Mr. Secretary Cardwell.*)

Ordered, by The House of Commons, *to be Printed,* 22 *February* 1869.

[*Price* 2 *s.* 10 *d.*]

17.

Under 28 *oz.*

BAY BRANCH
OF THE
Asiatic Society.

ARMY RESERVE.

COPY

OF

REGULATIONS FOR THE DISCIPLINE AND PAYMENT

OF THE

ARMY RESERVE.

(*Drawn up and presented to Parliament under the Act* 30 & 31 *Vict. c.* 110.)

War Office,
9 February 1871.

EDWARD CARDWELL.

REGULATIONS for the DISCIPLINE and PAYMENT of the ARMY RESERVE.

GENERAL REGULATIONS for the 1ST CLASS ARMY RESERVE.

[Made under the Reserve Force Act, 1867, and the Army Enlistment Act, 1870.]

1. THE ages and qualifications of men to be enrolled in the 1st Class Army Reserve, their terms of service, and the rates of pay to be granted them will be as shown in the annexed Table. Men now serving in Class 1, or in Section A, B, C, or E, of Class 2 of the Army Reserve, under the Regulations of 9th May 1868, who were at the date of their attestation under 34 years of age, may be re-attested for the 1st Class Army Reserve, under the present Regulations, notwithstanding their age may now exceed 34 years, provided they are in all other respects eligible for service.

MEN ELIGIBLE.	Rate of Pay.	Term of Service.
A. Soldiers who have been discharged from the Army either on the completion of their first term of service, or otherwise, provided they are under 34 years of age, have served for not less than three years in the Army, and have not been discharged for misconduct - - - - - -	4 *d.* a day - - -	5 years.
B. Soldiers who have enlisted for Short Service, after the expiration of their term of Army Service - - - - - - - - -	4 *d.* a day - -	The residue of the term of 12 years.
C. Soldiers, the residue of whose term of Army Service has been converted into Service in the Reserve Force, under the provisions of the 4th and 18th Sections of the Army Enlistment Act, 1870 - - - - - - - -	4 *d.* a day - -	The residue of the term of their Army engagement.

2. The pay of the men will be issued quarterly in advance, on their presenting themselves at such places and at such times as may be assigned by the staff officer of pensioners in whose district they reside.

3. If men are called out on permanent service, the whole period of their former service in the Army and in the 1st Class Army Reserve will be allowed to reckon in full towards good conduct pay and pension. They will not be entitled to pension for service in the 1st Class Army Reserve unless called out on permanent service.

4. The enrolment of all men in the 1st Class Army Reserve will be carried out under the personal superintendence of the staff officer of pensioners in each district, and of officers commanding regiments, and other officers authorised from time to time by the Secretary of State to act in that behalf.

5. Each man who is enrolled in the 1st Class Army Reserve under the terms of the Act 22 & 23 Vict. c. 42, will be required to make the declaration, and to take the oath prescribed in the form of attestation appended to these regulations, before a justice of the peace; and the officer by whom a man is enrolled will be held responsible that the prescribed form of enrolment has been duly completed, and that the man is eligible in every respect. The man will be required on attestation to give up his parchment certificate of discharge from the Army to the officer who enrols him, and will receive in lieu thereof a certificate of enrolment for the 1st Class Army Reserve on W. O. Form 65. This rule applies also to men who have been already enrolled, and staff officers of pensioners will accordingly exchange the certificates of discharge for the enrolment certificates as soon as practicable. On leaving the 1st Class Army Reserve, men will be required to give up their enrolment certificates. Their parchment certificate of discharge from the Army, on which their total service in the 1st Class Army Reserve will be noted, will then be returned to them.

6. The usual fee of 1 *s.* will be payable to the clerk of the magistrate before whom the man is attested. A reward of 2 *s.* will be paid to every Pensioner or Army Reserve man for each approved volunteer enlisted by him for the 1st Class Army Reserve.

7. Each man will be medically examined as to his fitness for service. Such examination will be made, in accordance with the prescribed regulations, by a military medical officer, on full or half-pay, or by a militia surgeon; or, if no such officer is available, by a private medical practitioner.

8. No person volunteering for the 1st Class Army Reserve will be compelled to enrol in a rank lower than that which he last held in his corps; but when there are no vacancies in the higher ranks, men who agree to serve in a lower rank until vacancies occur, will be entitled to reckon such service towards the pension of the higher rank after it has been attained.

9. The 1st Class Army Reserve, except when attached to any portion of the regular army, will be under the immediate command of the staff officers of pensioners within their several districts.

10. All men of the 1st Class Army Reserve are bound to register their place of abode in the books of the pension district, and to give due notice of removal to the officer of the district, under penalty of a fine of 2 *s.* 6 *d.* if notice be not given within one month of such removal.

11. All men of the 1st Class Army Reserve are bound to appear at the time and place of assembly when called out for training and exercise, or in aid of the civil power, or on the issue of Her Majesty's Proclamation in the event of imminent national danger, or of great emergency.

12. The provisions of the Mutiny Act and Articles of War are applicable to the 1st Class Army Reserve whenever it is called out or kept on duty, and the officers in command are hereby empowered to deal summarily with such offences committed by men under their command as do not necessarily require to be dealt with under the provisions above mentioned.

13. Any member of the 1st Class Army Reserve who, when called out for training or duty, shall fail to attend at the time and place of assembly, or who shall absent himself before the expiration of the period of such duty, except with leave or on account of sickness duly certified, will be deemed a deserter, and be liable to be tried and punished accordingly. At the termination of each training the Staff Officers will make reports to the War Office of the absentees,

absentees, giving such information as they may be able to ascertain regarding them, to enable the Secretary of State to determine whether any proceedings shall be instituted with a view to their recovery to the service, or, in the event of their subsequently rejoining, to impose such penalty as he may deem necessary.

14. Leave of absence, under special circumstances, may be granted by the staff officer of pensioners, and the period of such absence will reckon as service in the 1st Class Army Reserve.

15. When members of the 1st Class Army Reserve are called out for training and exercise, except as provided in Article 18, they will receive for every day, or part of a day, during which they are present on parade, but not otherwise, pay at the following rates:—

	s.	d.
Battalion Serjeant Major to a force of three companies and upwards	4	–
Company Serjeant Major	3	6
Serjeant or other superior Non-commissioned officer (except as above provided)	3	–
Corporal	2	6
Private, Drummer, or Bugler	2	–

16. When members of the 1st Class Army Reserve are called out in aid of the Civil Power, they will be granted extra pay at 6 *d.* a day, in addition to the foregoing rates.

17. The foregoing rates of pay will be held to include allowances (except as provided in Art. 18), hot meals, or other advantages usually enjoyed by Her Majesty's regular forces, and will be paid in addition to the daily pay of 4 *d.*

18. An allowance of 1 *l.* will be payable to each man on his enrolment in the 1st Class Army Reserve, to provide him with the following necessaries:—

1 pair of boots,
2 shirts,
2 pairs of socks,
1 stock,

and he will receive a like sum every subsequent year for the same purpose, provided the officer who makes the issues is satisfied that the man is duly provided with these articles. Payments on this account will be made as far as possible when the men are called out for annual training and exercise, but no man who shall have received a sum of 1 *l.* on enrolment will be entitled to a second issue of the same allowance within the period of the same year, ending on 31st March, in which he is enrolled. These articles will be left in possession of the men.

19. The issue of the allowance for necessaries will be suspended for absence from training or its equivalent, from whatever cause, but when the issue of the allowance is so suspended, it may be paid on the next occasion prior to the next annual training on which the man attends for duty, provided he be complete in necessaries. This allowance is personal to men of the force, and in the event of the death of an enrolled member prior to its receipt it will not be payable to his legal representative.

20. Every non-commissioned officer and man in the 1st Class Army Reserve will be supplied at the public expense with a tunic, a pair of trousers, and a chaco, every seven years, at the expiration of which period they will become the property of the man. In the event, however, of his transfer to another district, or discharge from the force, or of his death, before the expiration of seven years, the clothing will be the property of the public, and be available for re-issue. A haversack will also be issued to each man, and renewed when necessary. These articles, when not in use, will be kept in the public store, under the directions of the staff officer of the district.

21. Travelling allowance at the rate of 1 *d.* a mile, in aid of his expenses in coming from and returning to his registered place of abode, will be allowed to every

every man residing more than five miles from the place of assembly on each occasion of his being called out for duty or exercise.

22. The attestations will remain in the custody of the staff officer of pensioners of the district in which the men reside. The record of service attached to the form will be carefully filled up each year, and the entries verified by the staff officer, who will also testify to the correctness of the record when the man's removal to another district renders it necessary that his declaration and record of service should be transferred to the staff officer of such district. The requisite particulars of service will, when necessary, be obtained from the commanding officers of the corps to which men have been attached for duty.

23. Every man of the 1st Class Army Reserve will be required to give due notice to the staff officer of pensioners in whose payment he may be, of his intended removal to another district, in order that there may be no delay in his being taken on the strength of such district. The staff officer, in addition to forwarding to the head quarters of such district the man's attestation and record of service, as required in the preceding article, will also transmit a transfer certificate (W. O. Form 484) including the particulars of last issue of pay, and of any fines recoverable from the man. Immediately on arrival in his new district, the man will report himself personally to the staff officer of pensioners, if intending to reside at the head quarters of the district, and if at an out-station to the out-station serjeant.

24. The staff officer of pensioners will annually bring to the notice of the Secretary of State, any cases of men who have become inefficient from continual sickness, or other physical disability, or whose conduct shall have been such as to require their removal from the force, and the Secretary of State will, at his discretion, direct them to be discharged, subject, however, to the consideration of the claims on the part of deserving men to a gratuity for meritorious and long service.

25. In case of the death of any pensioner while enrolled in the First Class Army Reserve, an allowance of one guinea will be granted to defray the funeral expenses; but in the case of members of the force, who are not pensioners, no such allowance will be payable unless death shall actually occur while on service.

26. No service will reckon for any year in which the person enrolled has not resided at his registered place of abode, or has absented himself during any portion of the period for which he has been called out for exercise or duty, unless with leave.

27. Members of the 1st Class Army Reserve who may be wounded or disabled in the execution of their duty, will be entitled to the same pension as they would have received under similar circumstances in the regular Army.

Men discharged in consequence of inefficiency from continual sickness or other physical disability, who whilst in the Army Reserve have been regular in their attendance when called out for training and exercise, or in aid of the civil power, have not absented themselves from their registered place of abode, and whose general conduct has been good, may be awarded gratuities at the following rates:—

	£.	s.	d.
After a combined service in the Army and Army Reserve of not less than 14 years - - -	3	–	–
Ditto - of not less than 18 years - - -	4	10	–
Ditto - of not less than 21 years - - -	6	–	–

The cases of men discharged in consequence of accidents or sickness contracted "in and by" service in the Army Reserve, will be specially considered.

28. When men of the 1st Class Army Reserve are on duty, and are so circumstanced as to render it impossible for them to return each day to their homes, the staff officer of pensioners or other officer under whose orders they are immediately placed, will, if no temporary accommodation in barracks or other

other public buildings can be afforded them, make arrangements for their being billeted in the same way as if they belonged to Her Majesty's Regular Forces. He will at the same time divide the men into squads, each in charge of a serjeant or other non-commissioned officer, to whom, in conjunction with one or more men selected for the purpose, advances of money not exceeding two-thirds of the daily pay of the men included in each squad, may be made, at the discretion of the staff officer, in order to provide for their daily subsistence, as nearly as practicable in accordance with the usage of the Regular Army. The staff officer will be bound to investigate fully, and, as far as possible, remedy, any complaints which may be preferred by the men, and will, to the best of his power, see that their interests are attended to, and that they are provided with good and sufficient meals.

29. Staff officers of pensioners will include in their quarterly accounts with the War Office all charges on account of allowance for necessaries, pay, travelling, under Article 21, and any other expenses specially authorised; and at the same time give credit for all fines and penalties recovered on the public account.

30. The staff officers of pensioners or other officers will be required to render, early in January in each year, to the Secretary of State for War, Returns on War Office Form 483, detailing the names and services of the men, and all changes in the force since the date of the last Return. They will also transmit to the War Office quarterly returns of the strength of the force, as shown on the recapitulation provided in War Office Form 483. They will also forward duplicates of these returns to the general officer commanding the district.

31. The circumstances and conditions under which fines or penalties are to be imposed upon men of the 1st Class Army Reserve for various offences, are detailed in the Appendix hereto.

32. In the case of men applying to join the 1st Class Army Reserve who have lost their parchment certificates of discharge, it will be necessary that the staff officer of pensioners should apply to the commanding officer of the men's late regiment for a certified record of their service, character, and personal description, and the note of their enrolment in the Reserve will be made by the staff officer on such certificate, where the parchment discharge is not obtainable. In order to guard against the possibility of enrolling persons who may have improperly become possessed of the parchment certificate or other certificate of discharge, the staff officer will be careful to satisfy himself as to the identity of the candidate applying to be enrolled with the man named in such certificate.

33. The staff officer of pensioners is authorised to issue to each candidate attending for medical inspection, one day's pay (at the rate to which he would have been entitled if called out for training and exercise), and travelling expenses at the rate of 1 *d.* a mile for any distance he may have travelled going to, and returning from, this inspection. One half of these rates may be allowed to those men who may be rejected.

34. The fee payable to a private medical practitioner for the examination of each candidate, where there is no military medical officer available to perform the duty, is 4 *s.* if the man be found fit for enrolment, and 2 *s.* 6 *d.* if unfit.

35. The fee of 1 *s.* on attestation (as allowed by Article 6), payable to the clerk of the magistrate who attests the man, may, when not claimed by the clerk, be paid to the staff or quartermaster serjeant who attends with the man before the magistrate.

36. When men apply to be enrolled who have been discharged from the Army too short a time to have had an opportunity of retrieving an "indifferent" character, they may be informed that their application will be considered at a future period on their producing proof of satisfactory conduct in the meantime. Should the staff officer of pensioners, however, meet with any special case of this kind, it will be his duty to report the circumstances to the War Office for instructions.

37. On enrolment and approval the man may at once receive his pay for the remainder of the current quarterly period.

38. The staff officer of pensioners is to understand that he is no longer restricted to the establishment fixed for his district (which he has not hitherto been permitted to exceed), but he may enrol as many men in the Reserve as may be available in his district.

39. In the quarterly return showing the strength of the Army Reserve, War Office Form 518, the staff officer will be careful to state the precise number of the First and Second Classes of the new Reserve, of the old Army Reserve, and the enrolled Pensioners, placing them under separate headings.

In the annual nominal return on Form 483, the men of the old Reserve, and of the 1st and 2nd Classes of the new Reserve, should be kept distinct; but no enrolled pensioners are to be included therein.

40. Regulations as to training and exercise will be issued from time to time.

APPENDIX, No. I.

FINES AND PENALTIES.

	PRIVATE.		CORPORAL.		SERJEANT.	
	First Offence.	Second Offence.	First Offence.	Second Offence.	First Offence.	Second Offence.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
For absence from exercise or inspection during the first half hour, or any part thereof - - -	– 6	1 –	– 9	1 6	1 –	2 –
For absence during the next quarter of an hour, or any part thereof, an additional sum of - - -	– 6	1 –	– 9	1 6	1 –	2 –
For absence during the whole of the first hour - -	2 –	4 –	2 6	5 –	3 –	6 –
For absence during the whole of the day, or for any period after the first hour - - - - - -	1 6	3 –	2 –	4 –	2 6	5 –
Failing to give notice of removal within one month -	2 6	5 –	2 6	5 –	2 6	5 –

2. When any of the three fines first above referred to, for partial absence from inspection or exercise, have been incurred, the man will be entitled to full pay for the day of absence, subject to the deduction of the fine; or, when the amount of the latter exceeds the former, the full pay may be carried to the account of the said fine; but when the fine has been incurred for absence during the whole day, no pay for that day can be claimed towards the extinction of the fine, and the full amount thereof must be defrayed from the future pay of the offender.

3. In the event of any man failing to appear within a reasonable period, when called out in aid of the civil power, the circumstance will be reported to the War Office. No further issue of pay will be made to him till the reason of such absence has been inquired into, and special instructions given on the subject.

4. Any man who, during inspection or exercise, shall be guilty of inattention, or of talking in the ranks, after having been cautioned on the subject, will be liable to be fined 6 *d.* for the first offence, 1 *s.* for the second offence, and 2 *s.* for the third.

5. Any man who, during inspection or exercise, shall behave or express himself in a disrespectful manner to his officers or non-commissioned officers, will not only be liable to the absolute forfeiture of the pay of 2 *s.*, which he would otherwise have received, but will, at the discretion of the staff officer, be specially reported to the Secretary of State.

6. Any man who, during inspection or exercise, shall appear on parade drunk, will be liable to be fined 2 *s.*; or, if the staff officer shall report his misconduct to the War Office, he shall suffer such other punishment as may accord with the provisions of the Mutiny Act and Articles of War, and as may seem proper to the Secretary of State for War.

7. And if any man, when called out on duty in aid of the civil power, or for inspection or

or exercise, shall conduct himself in a violent or insubordinate manner, the staff officer will place the offender in confinement, under the 12th section of the Army Reserve Act, 1867, reporting the case to the Secretary of State for War.

8. If any man when actually called out on duty, under arms, in aid of the civil power, in preserving the public peace, shall conduct himself in a manner so violent and insubordinate as to render an immediate example necessary, the staff officer will, in pursuance of the powers contained in the 12th clause of the said Act, report the case to the senior officer in command on the spot, with a view to the offender being tried by court-martial.

9. The staff officer will, immediately after every inspection or exercise, receive the reports of the officers and non-commissioned officers, and enter in a defaulter's book the names of any men who may have been absent or misconducted themselves, together with his decision as to the penalties to be inflicted, in pursuance of the preceding regulations; or, in aggravated cases, he will report the circumstances in detail to the Secretary of State, who will, if any additional penalty appear requisite, order a portion of the pay to be suspended, or the case to be dealt with as may seem to him to be necessary.

10. These fines will be deducted from the pay of the man, and if the pay for that day is insufficient, the deduction will be made from the next pay which may become due to the offender. In charging these fines, it must be kept in view that the additional penalties inflicted for repetition of the same offence are applicable only to the total number of offences committed in any one year.

11. When there are two staff officers at the head-quarters of any district, each of them will decide on the fines to be inflicted on the men of his own division, except in the case of offences committed immediately under the eye of the senior officer when on duty, who will in that case inflict such fine, not exceeding the amount prescribed by regulation, as the offence appears to merit.

12. Every staff officer will report to the Secretary of State all cases in which fines are inflicted; and if any man shall feel himself aggrieved, he may address the Secretary of State for War on the subject, through the staff officer of his district.

13. In the event of any of the arms or accoutrements being broken or injured during inspection or exercise, the staff officer will immediately inquire into the circumstances, and if it appears to have been done wilfully or through neglect, he will forthwith report the circumstance to the Secretary of State, with a view to the expense of repairs, together with such penalty, not exceeding double the amount of such loss or damage, as the Secretary of State may direct, being deducted from the pay of the offender; but if the injury has taken place accidentally, or without any manifest negligence on the part of the man, the officer will furnish a return thereof to the War Office on W. O. Form 513, at the period prescribed for rendering such return in each year, when the necessary instructions will be given for the damaged arms, &c. being repaired or replaced

---

APPENDIX, No. II.

W. O. Form 988.

CLASS I.—ARMY RESERVE.

ATTESTATION PAPER

under the Reserve Force Act, 1867 (30 & 31 Vict. c. 110), and the Army Enlistment Act, 1870 (33 & 34 Vict. c. 67).

DECLARATION to be made by a Man on entering the Army Reserve Force.

I* late of the† Regiment of
do declare that I am willing to serve Her Majesty, Her heirs and successors, in Class I. of the Army Reserve Force, according to the terms of the Reserve Force Act, 1867, and of the Army Enlistment Act, 1870, for five years, provided my services should be so long required; and, further, to serve until legally discharged if, at the expiration of such period, I am upon Army Service; but not beyond six months after peace has been next proclaimed.

I do further declare that I make this declaration of my own free will and consent.

_____ Signature of the Man.

_____ Signature of the Witness.

_____

Staff Officer of Pensioners, or other Officer authorised to Enlist Men.

_____ District.

* Here insert Christian and surname in full.

† Here insert the number or description of the regiment or corps.

FORM of OATH to be taken by an Army Reserve Man on Attestation.

I , do make oath, that I will be faithful and bear true allegiance to Her Majesty, Her heirs and successors, and that I will, as in duty bound, honestly and faithfully defend Her Majesty, Her heirs and successors, in person, Crown, and dignity, against all enemies, and will observe and obey all orders of Her Majesty, Her heirs and successors, and of the generals and officers set over me. So help me God.

Witness my hand.

The above declaration and oath were made before me,
at this day of
One thousand eight hundred and
at o'clock, M.

_____ Signature of the Army Reserve Man.

_____ Witness present.

Signature of the Justice _____

CERTIFICATE of SURGEON.

I certify that I have carefully examined of the regiment of , and that in my opinion he does not suffer from any disability or ailment likely to interfere with the efficient performance of military duties.

(Signature) _____

Examining Surgeon.

_____

Date _____ 18_____.

CERTIFICATE of STAFF OFFICER of PENSIONERS, or other Officer authorised to Enlist Men.

I certify that the man named in this attestation is in all respects eligible for service under the regulations for the Army Reserve Force.

_____

Description of Soldier.

Description of , named above.

Corps from which discharged	
Date of discharge	
Rank in which discharged	
Service which he is entitled to reckon towards pension	
Age last birthday	
Height	
Character on discharge	
Good conduct badges on discharge	
Cause of discharge	
Present residence	
Present occupation	
Colour of hair	
Colour of eyes	
Colour of complexion	

Note.—Any man engaging in the 1st Class Army Reserve, must, before being attested, produce his parchment certificate of discharge to confirm the above particulars.

Conditions of Service in 1st Class Army Reserve.

1. Men, on engaging, must be under 34 years of age, have served for not less than three years in the army, and have not been discharged for misconduct.

2. The force may be called out for training and exercise, together or otherwise, at such places and for such times, not exceeding 12 whole days, or 20 drills, in any year, as Her Majesty may direct.

3. The

3. The force may be called out in aid of the civil power.

4. In case of imminent national danger, or of great emergency, the men may be called out on permanent service by proclamation; they then become liable to general service with the regular army, and to serve until their services are no longer required; provided always that such period shall not extend beyond six months after peace has been next proclaimed.

5. Whenever the force is called out for training and exercise, or in aid of the civil power, or on service, all the provisions of the Mutiny Act and Articles of War apply to it.

6. The Secretary of State may make regulations in relation to the execution of the Act.

7. If men are called out on permanent service, the whole period of their former service in the army and in the reserve force will be allowed to reckon in full towards good conduct pay and pension. They will not be entitled to pension for service in the reserve force unless called out on permanent service.

Name_____

RECORD of SERVICE in the First Class Army Reserve.

Attested_____18 For_____Years.

Pension District.	Rank.	Description of Service.	Particulars of Service Performed, or of Absence in each Year.		Amount of Service towards Completion of Engagement.		Signature of Staff Officer of Pensioners.
			From	To.	Years.	Days.	

To be filled up by the staff officers of pensioners agreeably to the Army Reserve Force Regulations.

APPENDIX, No. III.

(W. O. Form 990.)

DECLARATION.

To be made by a man on converting the residue unexpired of his term of 12 years, from army service to service in Class I. of the Army Reserve, under the 4th and 18th sections of the Army Enlistment Act, 1870.

I of the regiment of do hereby declare that I am willing to serve in the First Class Army Reserve for the residue unexpired of my term of 12 years, provided Her Majesty may so long require my services, and for a further term of 12 months, if abroad, or if a state of war exists between Her Majesty and any Foreign Power, if I should be directed so to serve by the Secretary of State for War, or by the Commanding Officer of any Foreign, Colonial, or Indian Station; and I also declare that I am

I am liable during the term of my service in the Reserve to be called upon by Her Majesty's Proclamation in time of imminent national danger or great emergency, to serve in any regiment or corps of the branch of the army in which I am now serving.

_____Signature of the soldier.

_____Witness.

(Officer Commanding_____.)

Dated at_____

_____day of_____187

INSTRUCTIONS for the Mobilization of the Army Reserve for Permanent Service.

1. A registry of the men composing the respective classes of the Army Reserve will be kept with great care by staff officers of pensioners, and all additions to, and alterations in, it occasioned by fresh enrolments, transfers, and removals from the list, from whatever cause, will be notified to this Department in such manner as may be directed from time to time.

2. The services of the constabulary and police throughout the United Kingdom having been made available under the provisions of the 20th section of the Army Enlistment Act, 1870 (copy herewith), for the purpose of distributing the notices for calling out the Reserve Forces, whether for training or permanent service, a form of notice paper has been prepared, a copy of which accompanies this circular. (*See* Appendix, No I.)

3. These notice papers, a supply of which will be forwarded to each staff officer of pensioners, should always be kept ready, with the names and addresses of the men in the 1st and 2nd Class Army Reserve, including the enrolled pensioners, filled in, leaving only the date and signature of the staff officer not filled in; so that on the receipt of the order calling out the Reserve, the notice papers may be completed, and placed without loss of time in the hands of the proper local officer for distribution by the constables.

4. The staff officers of pensioners will place themselves in communication with the chief officers of constabulary and police, in order to make such preliminary arrangements as regards the sorting of the notices, according to police districts or otherwise, as will most effectually tend to the easiest and most rapid method of their distribution.

5. After the men have been collected at the rendezvous, the staff officer of pensioners will follow such directions as he may receive regarding their disposal, and from that time they will pass from the payment and control of the staff officer of pensioners to that of the military authorities.

6. The staff officer of pensioners will be careful to note the destination of each individual, so that he may know with what paymaster to communicate, in the event of there being any arrears of pay due to any of the men.

7. When any men summoned to the colours reside at a place where there is an out-station serjeant, the staff officer of pensioners will advise the out-station serjeant of the notice papers having been issued, in order that he may render assistance

assistance to the constable appointed to deliver the notices, and, where requisite, act as a conductor of the party to the rendezvous.

8. The staff officer of pensioners will hold at the disposal of the district military authorities such of his pension staff as may be required, for the purpose of conducting.

9. Neither clothing nor arms will be issued to the men of the 1st class Army Reserve from the pension stores. They will proceed to their destination in the clothes in which they may appear at the rendezvous.

10. For obvious reasons as little time as possible should elapse between the members of the force reporting themselves at the rendezvous, and their delivery over to the military authorities. Staff officers of pensioners are therefore enjoined to be very particular in not allowing any member of the force to return to his home after reporting himself.

11. Men who disregard the summons to join render themselves liable to be proceeded against according to law. The staff officer of pensioners will be able to ascertain from the counterfoil of the notices (which he will request the chief constable to return to him) what men have failed to answer the call.

12. The names of all absentees will be immediately reported to this Department.

13. Simultaneously with the issue of the notices, the staff officers of pensioners will make the necessary arrangements with the municipal and parochial authorities for causing placards (*See* Appendix, No. II.) to be affixed to the doors of the town hall, the churches and chapels, and the police barracks, both at the pension head-quarters and out-stations, as well as at the gates of the barracks, should there be any in the pension district.

14. The same course as regards the preparation of the notices, and their distribution by the police will be followed, in the event of the reserve or any portion of it being called out for other than permanent service, on the staff officer of pensioners receiving special orders to that effect, but not otherwise.

APPENDIX, No. I.

W.O. Form 512.

Army Reserve _____ Class.

_____ (Name.)

Late _____

Residence _____

Notice delivered at _____ o'clock on _____

of _____ 18 _____.

Signature of Man if present at time of delivery.

* Report

Signature of Constable.

* The constable who delivers the notice to say whether the man at the time of delivery was present (if present, the man's signature should be obtained) or absent. If absent, the cause should be stated, as also the name of the person, if any, in whose charge the notice was left.

NOTICE TO JOIN THE ARMY FOR PERMANENT SERVICE.

Army Reserve _____ Class.

(Name) _____

Late _____ Residing at _____

You are hereby required to attend at the Pension Office of the _____

District, at _____ o'clock on the _____ of _____ 18 ____

failing which you will be proceeded against according to law.

This notice being for permanent service with such portion of the regular forces as may be directed from Head-Quarters, you should bring with you a change of linen.

RAILWAY WARRANT.

(To be cut off and retained at the Railway Station by the booking clerk, a Railway Ticket being exchanged for the same.)

To be filled in by the staff officer of pensioners.

Pass _____

From _____

To _____

Signature of Staff Officer _____

Date _____ (To be filled in by Booking Clerk.)

APPENDIX, No. II.

1ST CLASS.—ARMY RESERVE.

HER MAJESTY having been graciously pleased to direct by Proclamation that the 1st Class Army Reserve Force of the District be called out for permanent service, all men belonging to the said Reserve Force are required to report themselves at the Head-Quarters of the Pension District at on to receive orders from their Staff Officer as to their destination.

ARMY RESERVE.

COPY of REGULATIONS for the DISCIPLINE and PAYMENT of the ARMY RESERVE.

(*Presented pursuant to Act* 30 & 31 *Vict. c.* 110.)

Ordered, by The House of Commons, *to be Printed,*
13 *March* 1871.

01.

Under 2 *oz.*

REPORT

OF THE

SPECIAL COMMITTEE

ON

M.L. *v.* B.L. FIELD GUNS.

NOVEMBER 1870.

Presented to both Houses of Parliament by Command of Her Majesty.
1871.

LONDON:
PRINTED FOR HER MAJESTY'S STATIONERY OFFICE,
BY HARRISON AND SONS,
PRINTERS IN ORDINARY TO HER MAJESTY.

1871.

[C.—283.] *Price* 1*s.* 6*d.*

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Letter of Instructions to the Committee.

War Office, Pall Mall, 25th July, 1870.

To Major-General Sir John St. George, K.C.B., R.A.

Sir,

I am directed by Mr. Secretary Cardwell to inform you that he has appointed you President of a Committee to carry out certain comparative trials with a 9-pr. M.L. battery of bronze guns, and a battery composed of 12-pr. and 9-pr. B.L. wrought-iron guns.

The Members of the Committee will be as follows, viz.:—

Major-General Eardley-Wilmot, R.A.
Major-General G. Gambier, C.B., R.A.
Colonel Wray, C.B., R.A.
Bt.-Colonel C. S. Henry, C.B., R.H.A.
Bt.-Colonel Milward, C.B., R.A.
Bt.-Colonel Michell, C.B., R.A.
Lieut.-Colonel Reilly, C.B., R.A.
Captain Wolfe, R.A.
Captain Thornhill, R.A.
Captain Alderson, R.A.
Lieut.-Colonel Heyman, R.A., *Secretary.*

The Committee is desired to report on the comparative merits of the 12-pr. and 9-pr. B.L., and the 9-pr. M.L. guns on the following points:—

1. Range and accuracy of projectiles.
2. General comparative power of projectiles, that is, of Segment, Shrapnel, common shell, and case-shot, including initial velocity, penetration, &c.
3. Comparative quickness of firing, and ease of working both natures of guns.
4. Original cost of a sub-division of each nature, including gun, gun-carriage, limber, wagon, ammunition, and stores.
5. Cost of maintaining each nature of gun as regards the gun itself, its component parts, and its reserves of equipment, tools, and stores.
6. Comparative simplicity, endurance, and facility of repair of each nature of gun, both as regards the gun, its ammunition, equipment, and stores.
7. The capability of the projectiles, cartridges, and fuzes for each nature of gun to bear the tests of travelling, climate, and chemical action.
8. Any other points of comparison which the Committee may consider necessary to report upon.
9. Finally, which nature of gun is considered generally most efficient for war.

One battery will consist of three 12-pr. and three 9-pr. B.L. guns, and the other of six 9-pr. M.L. guns.

Each gun will be provided with ammunition as follows, viz.:—

100	rounds	shrapnel shell.
100	„	segment shell.
20	„	common shell.
20	„	case-shot.
240	rounds.	

The trials will take place at Aldershot as soon as the guns are ready, and in addition to practice at targets, the batteries will be exercised at *drill*,—be travelled,—mounted and dismounted, and put to any other tests which the Committee may deem necessary to a full development of the power and general serviceability of each nature of gun and its ammunition.

The Reports of the late Ordnance Select Committee, and any other official documents bearing on the subject will be placed at the disposal of the Committee, and any information which may be required from the departments in the Royal Arsenal to enable the Committee to prosecute their enquiries, may be obtained by direct communication with the Superintendents, and the Controller at Woolwich.

I have, &c.

(Signed) John Adye, *Brigadier-General,*
Director of Artillery and Stores.

REPORT.

TO THE RIGHT HONOURABLE THE SECRETARY OF STATE FOR WAR.

Sir,

1. THE Special Committee appointed to carry out certain comparative trials between a battery of 9-pr. muzzle-loading bronze guns, and a battery composed of 12-pr. and 9-pr. breech-loading wrought-iron guns, have the honour to submit their Report with with reference to the several points to which their attention has been specially directed, viz.:—

a. Range and accuracy of projectiles.
b. General comparative power of projectiles, *i.e*, Segment, Shrapnel, common shell and case shot, including initial velocity and penetration.
c. Comparative quickness of firing and ease of working both natures of guns.
d. Original cost of a sub-division of each nature, including gun, gun-carriage, limber, wagon, ammunition, and stores.
e. Cost of maintaining each nature of gun as regards the gun itself, its component parts, and its reserves of equipment, tools, and stores.
f. Comparative simplicity, endurance, and facility of repair of each nature of gun, both as regards the gun, its ammunition, equipment, and stores.
g. The capability of its projectiles, cartridges, and fuzes for each nature of gun, to bear the test of travelling, climate, and chemical action.
h. Any other points of comparision which the Committee may consider necessary to report upon.
i. Finally, which nature of gun is considered generally most efficient for war.

2. The practical part of the enquiry was carried out as far as possible at Aldershot in accordance with an approved programme, under the immediate supervision of a Sub-Committee composed of the officers named in the margin, the other members of the Committee attending the experiments as often as their other duties permitted.

Col. Henry, C.B., R.H.A.
Col. Michell, C.B., R.A.
Capt. Wolfe, R.A.
Capt. Thornhill, R.A.

3. One battery consisted of three 12-pr. breech-loading and three 9-pr. breech-loading guns, mounted on service wood travelling carriages, and was in charge of Captain King, A Battery, B Brigade, Royal Horse Artillery.

The other battery consisted of six 9-pr. muzzle-loading bronze guns, mounted on wrought-iron carriages, and was in charge of Captain Whinyates, C Battery, B Brigade, Royal Horse Artillery.

Colonel Henry was in command of the whole.

4. Each gun was provided with the following rounds of ammunition:—

100 rounds Shrapnel.
100 „ Segment.
20 „ Common shell.
20 „ Case-shot.
120 Percussion fuzes.
120 Wood time fuzes.

5. The detailed report of each experiment, showing the effects produced by the respective natures of guns will be found in Appendix No. II, and with a view to a ready comparison of the general results, the Committee submit analytical tables in which the actual effect of each individual trial is reduced to a certain standard of comparison which is a percentage of the total effects. (Appendices III, IV, V, VI.)

6. In proceeding to report their opinions upon the several points which have been referred for their consideration, the Committee must observe that the conditions as to charge and weight of projectiles, are so different in each case as to preclude any proper comparison being made between these breech-loading and muzzle-loading guns.

For instance, the nominal weight of projectiles for the 9-pr. breech-loading gun is 9 lbs., the charge $\frac{1}{8}$th, or 1 lb. 2 oz. The weight of gun is 6 cwt.

The nominal weight of projectiles for the 9-pr. muzzle-loading gun is also 9 lbs., but the charge is slightly in excess of $\frac{1}{5}$th, or 1 lb. 12 ozs. The weight of gun is 8 cwt.

The nominal weight of projectiles for the 12-pr. breech-loading gun is 12 lbs., the charge is $\frac{1}{8}$th, or 1 lb. 8 ozs. The weight of gun is 8 cwt.

7. With such diversity of elements, it will be readily conceded that in respect to range and power of gun no scientific comparison can be made, either between the 9-pr. breech-loading and 9-pr. muzzle-loading gun, or the 9-pr. muzzle-loading and he 12-pr. breech-loading gun.

8. With the charges and weight of projectiles, however, which have been assigned to, and at present represent the service charge and weights of projectiles of the several guns, the Committee have to report as follows :—

Range and Accuracy of Projectiles.

nge and ac-
acy.

9. To determine these points in a satisfactory manner, the Committee recommended that one of each nature of gun should be sent to Shoeburyness, where every means and appliance existed for making the comparison under the most reliable conditions.

Their recommendation was however overruled and, consequently, they are unable to submit any nearer comparison than that which is afforded by the results of practice carried on at different times and under different circumstances, but with the same brand of powder.

The practice with the muzzle-loader was carried on by the Committee on Indian Field Equipment, that with the breech-loaders by this Committee.

They submit a table of ranges, together with diagrams of the probable rectangles of shooting of the several guns, Appendix X, derived from practice at 1, 3, 5, 7, and 9 degrees of elevation, by comparing which it will be seen that, in respect to accuracy, there is little practical difference between the shooting of the 12-pr. breech-loading and the 9-pr. muzzle-loading guns, and that both are much superior to the 9-pr. breech-loading gun.

The 9-pr. muzzle-loading gun, with its relatively high charge, commands a more extended range at equal elevations.

General Comparative Power of Projectiles, that is, of Segment, Shrapnel, Common Shell, and Case-Shot, including Initial Velocity, Penetration, &c.

eral compara-
power of pro-
les; Shrapnel
ll.

10. As regards comparative power of projectiles, it will be observed on reference to Tables (Appendices III, IV, V, and VI), that in respect to Shrapnel shell with time fuzes, the 9-pr. muzzle-loading gun has shown a superiority, not only over the 9-pr. breech-loading but also over the 12-pr. breech-loading gun.

This result is probably due to the lower trajectory of the muzzle-loading gun.

The velocities of the several guns with the powder used on this occasion,—viz., R. L. G. powder of selected density,—are as follows :—

Register Number of Gun.	Description of Gun.	Number of Rounds fired previous to these Velocities being taken.	At muzzle.	At 1,000 yds.	At 2,000 yds.
			feet.	feet.	feet.
1	9-pr. breech-loading gun of 6 cwt..	3,522	1,072	882	760
344	12-pr. breech-loading gun of 8 cwt..	2,372	1,144	932	825
3	*9-pr. muzzle-loading gun of 8 cwt..	809	1,330	978	837

ment Shell.

11. As regards Segment shell with percussion fuzes, the results given by the 9-pr. muzzle-loading gun on this occasion are about equal to those of the 9-pr. breech-loader. They are, however, inferior to those given by the 12-pr. breech-loading gun, a result which appears to the Committee to warrant the supposition that the 9-pr. muzzle-

* The velocity at muzzle given by this gun when new was 1,398 feet; the velocities of the B. L. guns have not been impaired.

loading Segment shell, which is only at present experimental, is not of a suitable form. It is also necessary to state that the breech-loading Segment shell is known to be deficient in strength; as already pointed out by the Dartmoor Committee. In the present trial, 42 12-pr. and 33 9-pr. breech-loading Segment shells broke up on graze, against 7 of the muzzle-loaders.

12. With regard to Common shell fired with percussion fuzes to burst on graze, the 9-pr. muzzle-loading gun has shown a superiority over both the breech-loading guns. Common shell.

13. In respect to case-shot the particular patterns tried on this occasion, with the exception of the 9-pr. muzzle-loading case shot, were merely experimental, and it is clear from the results of the practice that they all require considerable improvement. Case shot.

COMPARATIVE QUICKNESS OF FIRING, AND EASE OF WORKING BOTH NATURES OF GUNS.

14. It will be observed on reference to Appendix No. II, p. 10, Experiment 9, that when rapidity of fire is combined with steady and deliberate aim, the muzzle-loading 9-pr. gun has invariably the advantage, and such also is the experience of the School of Gunnery, from trials made at Shoeburyness between muzzle-loading and breech-loading field guns. Rapidity of fire, and ease of working.

With the muzzle-loader the operation of loading is of the simplest character. The shot and cartridge are rammed home simultaneously, and the operation does not interfere with the laying of the gun, which can be proceeded with at the same time.

With the breech-loader, the breech has first to be opened, the shot and cartridge then inserted and rammed home separately, the breech has then to be screwed up. The gun cannot be laid until the breech is closed.

ORIGINAL COST OF A SUB-DIVISION OF EACH NATURE, INCLUDING GUN, GUN-CARRIAGE, LIMBER, WAGON, AMMUNITION, AND STORES.

15. The cost of a subdivision of each nature of gun with two lines of wagons is estimated as follows. The estimate provides for wrought-iron carriages, for full details see Appendix VII. Original cost of sub-division.

9-pounder B. L.	12-pounder B.L.	9-pounder M. L. (Bronze).
£ s. d.	£ s. d.	£. s. d.
601 5 2	618 16 3	585 1 11

to which must be added the cost of the special tools required for repairing the breech-loading guns, and of the additional stores carried by each battery of those guns (but which are not required with muzzle-loading guns, amounting to 85*l.* 6*s.* 1*d.*). For details see Appendices VIII and XI.

COST OF MAINTAINING EACH NATURE OF GUN AS REGARDS THE GUN ITSELF, ITS COMPONENT PARTS, AND ITS RESERVES OF EQUIPMENT, TOOLS, AND STORES.

16. The cost of maintenance being regulated by the effects of wear and tear, is necessarily variable, but under like conditions and circumstances the Committee are satisfied that the breech-loading gun would require a certain expenditure in excess of that of the muzzle-loader, looking to the additional tools and stores carried by each battery of breech-loading guns, and to the circumstance that skilled and specially paid armourers are attached to each battery for the purpose of attending to the repairing of vent-pieces and breech-screws, and to the repairs of all the more delicate mechanism of the breech-loading guns. Cost of maintenance.

As a case in point, the Committee may mention that at the completion of the recent trial at Aldershot, the vent coppers of the three 12-pr. breech-loading guns had to be renewed.

Comparative Simplicity, Endurance, and Facility of Repair of each nature of Gun, both as regards the Gun, its Ammunition, Equipment, and Stores.

Comparative simplicity, and facility of repair of gun.

Endurance of gun.

17. As regards the gun the Committee have no hesitation in giving to the muzzle-loading gun the preference, both in respect to simplicity and facility of repair.

The question of relative endurance depends entirely upon the material of which the guns are made, and can only be comparable under like conditions.

The breech-loading wrought-iron guns of the service, with their lead-coated projectiles, are practically indestructible.

Of the bronze muzzle-loading rifled 9-pr. guns which have been recently under trial at Shoeburyness, one has fired 2,673 rounds, and another 1,362 rounds, without their accuracy being seriously impaired; on the other hand, another gun (No. 3) is reported to have become unserviceable, through honey-combing, after firing 798 rounds; and of the three guns under trial at Aldershot, two are reported unserviceable by the Superintendent Royal Gun Factories, through the same cause, after firing 240 rounds.

18. If, as regards the question of endurance, the Committee are called upon to select between a structure of wrought-iron and steel, and one of bronze, as tried by the Committee, they unhesitatingly pronounce in favour of the former, whether the gun be a muzzle-loader or a breech-loader.

From an estimate furnished by the Superintendent Royal Gun Factories, it appears that the difference in cost for a 9-pr. muzzle-loading gun of 8 cwt., is only 12*l.* in favour of the bronze, viz. :—

Wrought-iron, with steel tube	86*l.*
Bronze	74*l.*

It may be urged that considerations of manufacture favour the adoption of bronze for muzzle-loading guns for India, but the same cannot be accepted as applying to this country, and taking weight for weight it is impossible to deny that far greater endurance, will be attained by the present mode of construction than by the use of bronze.

Ammunition, Equipment, and Stores.

19. With regard to the ammunition, equipment, &c., the Committee do not consider that any appreciable difference will be found between the endurance of the breech-loading and muzzle-loading stores.

Capability of ammunition to bear travelling, &c.

The Capability of the Projectiles, Cartridges, and Fuzes for each nature of Gun to bear the Tests of Travelling, Climate, and Chemical Action.

Time fuzes.

20. The Service breech-loading system, owing to the absence of windage, necessitates the employment of a mechanical arrangement for lighting the time fuze.

Method of ignition.

This is effected by the employment of a detonator, which has proved to be highly sensible to climatic influences.

21. The muzzle-loading gun on the other hand has the advantage of being able to use an ordinary wood time fuze, which experience has proved to be little, if at all, affected by climate.

Cartridges and lubricators.

22. As regards cartridges, the breech-loading guns have the great disadvantage of requiring the use of lubricators.

Percussion fuzes and projectiles.

In respect to other stores, such as percussion fuzes and projectiles, the Committee believe that whether for breech or muzzle-loading guns, there will be found little or no difference between them so far as regards their capability to bear the tests of travelling or climate.

Other points of comparison.

Any other points of Comparison which the Committee may consider necessary to Report upon.

Entrenching cover.

23. The only additional points of comparison which the Committee considered it desirable to ascertain, were: 1st. the relative facility of entrenching the guns in the

field; 2nd. The amount of cover afforded by each nature of gun to the detachments serving them.

The result is given at page 17, Appendix No. II, and in both cases is in favour of the breech-loading gun. In favour of B.L. gun.

FINALLY WHICH NATURE OF GUN IS CONSIDERED GENERALLY MOST EFFICIENT FOR WAR. Most efficient gun for war purposes.

24. With reference to the above question the Committee have to observe, that judging from the results of the practice in the hands of the troops at Aldershot, the 9-pr. muzzle-loading and the 12-pr. breech-loading guns appear, in respect to shooting, to be much upon a par: the former being superior in point of Shrapnel shell with time fuzes; the latter in point of Segment shell with percussion fuzes; the 9-pr. breech-loading gun being inferior to both. Accuracy equal.

25. The Committee have already shown in the body of this Report that the advantages of simplicity, facility of repair, ease of working, rapidity of fire, orignal cost, and cost of maintenance, are in favour of a muzzle-loading gun, and they consider that these qualifications outweigh the important advantage of the superior amount of cover given to the detachments when entrenched and in the open, which a breech-loading gun affords. Advantages—simplicity, &c. &c., in favour of muzzle-loading gun. Advantages of superior cover and facility of entrenchment in favour of breech-loading gun.

26. The Committee are therefore of opinion that, on the whole, a muzzle-loading gun is the more efficient for war purposes; but for the reasons given in paragraphs 17 and 18, they recommend that, if adopted for Home Service, they be made of wrought-iron with steel tubes. M.L. gun most efficient for service. To be made of wrought-iron with steel tube.

27. In conclusion, the Committee cannot refrain from expressing their opinion that the present 9-pr. breech-loading gun of 6 cwt. is not an efficient weapon for horse artillery. Conclusion. 9-pr. B.L. gun of 6 cwt. inefficient for horse artillery.

J. ST. GEORGE, Major-General, *President.*
F. EARDLEY-WILMOT, Major-General.
G. GAMBIER, Major-General.
E. WRAY, Colonel R.A.
C. S. HENRY, Lieut.-Colonel R.A., and Colonel.
T. W. MILWARD, Lieut.-Colonel R.A., and Colonel.
J. E. MICHELL, Lieut.-Colonel R.A., and Colonel.
W. M. S. WOLFE, Captain R.A.
H. THORNHILL, Captain R.A.
H. J. ALDERSON, Captain R.A.

H. HEYMAN, Lieut.-Colonel R.A.,
Secretary.

Captain WOLFE desires to record his dissent from the views expressed in pars. 25 and 26 (except as regards the material of which Field Guns should be made), and submits his reasons for doing so. Appendix I., page 10.

WAR OFFICE,
28th November, 1870.

NOTE.—Lieut.-Colonel Reilly was absent on special duty in France at the date of signature of this Report, although he agreed to the terms of the original draft.

LETTER OF APPROVAL.

Sir, *War Office, 28th December*, 1870.

I AM directed by the Surveyor-General of the Ordnance, to acquaint you that the Report of the Special Committee on Muzzle-Loading *v.* Breech-Loading Rifled Field Guns, of which you are President, has been approved by the Secretary of State for War, and that Mr. Cardwell entertains a high sense of the able and expeditious manner in which the enquiry and experiments connected with this important subject have been carried out, and desires his thanks to be conveyed to you and the other Officers composing the Committee for your valuable services.

I am to add that the Committee is now dissolved.

I am, &c.

JOHN ADYE, *Brigadier-General, Director of Artillery.*

Major-General Sir J. St. George, K.C.B.

APPENDIX No. I.

Sir,

HAVING dissented from the opinion of the other Members of the Committee, with reference to pars. 25 and 26, I am desirous that my reasons for doing so should appear in the Report.

1. I believe that the greater simplicity of construction and fittings claimed for the 9-pr. M. L. gun, is more than out-weighed by the advantages obtained from the cover and confidence to the detachment, that the system of breech-loading gives, either in the open, or in gun pits, besides the opportunity that the system presents, in either carrying permanently, or improvising, mantlets for the more complete protection of the gunners from the effects of the increased development of infantry fire.

2. Having seen every round fired during the trials at Aldershot, I am of opinion that the 12-pr. B. L. gun was very much more regular in its performance, and had not the faulty construction of the segment shell vitiated its accurate shooting, I believe that the target results would have been such as to warrant another conclusion being arrived at, as to the merits of the guns; and I am further of opinion that it is injudicious (at present) to discard a system of loading and shell firing that have proved successful in recent campaigns on the continent, for another, the experience of which has been confined to three or four guns experimented upon for the Indian Government, and those upon which this Committee have been instructed to report, whose specialité is a shrapnel shell and time fuze.

I venture to believe that the fittings of the 12-pr. B. L. gun and carriage are not so delicate as to give any grounds of apprehension that, in the hands of trained officers and men, they could not be kept efficient under all conditions of a campaign; and for the above reasons, I wish to record, with all humility and in deference to the opinions of my colleagues, for which I have the highest regard, that the 12-pr. B. L. gun with segment shell, as originally designed, and percussion fuze, is better suited and more efficient for war than the 9-pr. M. L. gun, with any projectile that has been devised for it.

MAYNARD WOLFE, *Brigade-Major, School of Gunnery.*

Major-General Sir John St. George, K.C.B., President.

APPENDIX No. II.

Comparative Experiments with B. L. and M. L. Field Guns, carried on at Aldershot in September 1870.

B.L. Battery composed of—
3 12-pr. guns.
3 9-pr. „

M.L. Battery composed of—
6 9-pr. guns.

1st Experiment. September 19th.

Over moderately uneven ground at a single line of targets 42 feet by 6 feet by 2 inches. Range 1,200 yards.

Each half battery brought up and halted opposite, and at the same distance from the targets, which were disposed in 3 sets, frontage of each 42 feet, thus—

7 targets.	7 targets.	7 targets.
3 12-pr. B.L. guns.	3 9-pr. B.L. guns.	3 9-pr. M.L. guns.

Deliberate fire. Shrapnel shell with time fuzes. 5 rounds per gun. Total,—15 rounds from each half battery.

	Through.	Lodged.	Struck.	Total.
12-pr. B. L.	68	17	20	105
9-pr. B. L.	61	13	19	93
9-pr. M. L.	100	27	19	146

2nd Experiment. September 19th.

Repeated with Segment shell with percussion fuzes.

	Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	142	22	36	200	4 targets down.
9-pr. B. L.	..	..	..	116	
9-pr. M. L.	9	2	2	13	

3rd Experiment. September 19th.

Over similar ground, at double rows of dummies, representing skirmishers, placed 12 feet part, and 12 feet between the rows on the crest of a rising slope; a row of 9 6-feet targets to represent the supports being placed 80 yards in rear and below the crest. Range 1,000 yards.

Deliberate firing.—Shrapnel shell with time fuzes. 5 rounds per gun. Total,—15 rounds from each half battery.

	Effects on Targets.				Effects on Dummies.		
	Through.	Lodged.	Struck.	Total.	Hits.	Killed.	
12-pr. B. L. ..	6	5	6	17	19	8	2 dummies down.
9-pr. B. L. ..	1	1	1	3	21	11	
9-pr. M. L. ..	8	3	13	24	30	14	

4TH EXPERIMENT. September 19th.

Repeated with Segment shell with percussion fuzes.

	Effects on Targets.				Effects on Dummies.		
	Through.	Lodged.	Struck.	Total.	Hits.	Killed.	
12-pr. B. L. ..	1	4	3	8	62	7	5 dummies down.
9-pr. B. L. ..	..	..	3	3	43	10	
9-pr. M. L. ..	3	..	3	6	4	3	1 blind shell.

5TH, 6TH, 7TH, AND 8TH EXPERIMENTS. September 19th.

Repeated 1, 2, 3, 4, at unknown distances.

On coming into action the distances were judged by the Officers Commanding the batteries, who communicated the same to the Captains of batteries. The elevation, and length of fuze (when using time fuze), was that specified on the range cards, which corresponded to the given or assumed range.

A correction of range was allowed after the first round.

5TH EXPERIMENT.

Distance judged, 1,400 yards. Shrapnel shell with time fuzes. 5 rounds per gun. Total,—15 rounds from each half battery.

	Effects on Targets.				
	Through.	Lodged.	Struck.	Total.	
12-pr. B. L. ..	128	12	11	151	1 target down.
9-pr. B. L. ..	..	..	..	20	
9-pr. M. L. ..	43	16	22	81	

6TH EXPERIMENT.

Repeated with Segment shell with percussion fuzes.

	Effects on Targets.				
	Through.	Lodged.	Struck.	Total.	
12-pr. B. L. ..	152	34	41	227	2 targets down.
9-pr. B. L. ..	6	9	13	28	
9-pr. M. L. ..	35	24	21	80	3 blind shells. 1 target down.

7TH EXPERIMENT.

Unknown ranges. Shrapnel shell with time fuzes. 5 rounds per gun. Total,—15 rounds from each half battery.

	Effects on Targets.				Effects on Dummies.		
	Through.	Lodged.	Struck.	Total.	Hits.	Killed.	
12-pr. B. L. ..	7	5	9	21	32	12	3 dummies down.
9-pr. B. L. ..	..	1	11	12	23	8	2 dummies & 1 target down.
9-pr. M. L. ..	3	1	4	8	34	13	1 blind shell.

8th Experiment.

Repeated with Segment shell with percussion fuzes.

	Effects on Targets.				Effects on Dummies.		
	Through.	Lodged.	Struck.	Total.	Hits.	Killed.	
12-pr. B. L. ..	3	3	4	10	11	8	
9-pr. B. L. ..	1	..	3	4	21	9	3 dummies & 1 target down.
9-pr. M. L. ..	..	2	2	4	18	7	1 dummy down.

9th Experiment. September 26th and 27th.

Practice to ascertain the effects of deliberate fire continued for three minutes on a row of 20 6 feet by 6 feet by 2 inches targets; each half battery coming into action at three different positions, advancing and retiring. Ranges unknown, varying from 800 to 1,800 yards. Each half battery firing simultaneously and at separate sets of targets.

Shrapnel shell with time fuzes.

1st position 1,400 yards.

	No. of Rounds.	Effects on Targets.				
		Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	10	40	18	10	68	1 blind shell.
9-pr. B. L.	12	58	5	12	75	3 do.
9-pr. M. L.	15	102	16	24	142	1 do.

2nd position, 1,500 yards.

	No. of Rounds.	Effects on Targets.				
		Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	15	84	8	7	99	
9-pr. B. L.	17	97	24	27	148	7 blind shells.
9-pr. M. L.	19	163	45	36	244	2 blind, 1 premature, 3 burst after graze.

3rd position, 1,750.

	No. of Rounds.	Effects on Targets.				
		Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	14	43	7	9	59	1 broke after graze.
9-pr. B. L.	17	81	27	19	127	
9-pr. M. L.	17	75	51	77	203	2 blind shells. 9 broke up. 1 target down.

10th Experiment.

Repeated with Segment shell with percussion fuzes.

1st position, 1,400 yards.

	No. of Rounds.	Effects on Targets.				
		Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	22	150	41	37	228	1 blind shell. 1 broke up.
9-pr. B. L.	17	42	12	28	82	1 premature. 4 broke up.
9-pr. M. L.	22	74	21	32	127	3 blind. 2 targets down.

10TH EXPERIMENT—*continued.*

2nd position, 1,500 yards.

	No. of Rounds.	Effects on Targets.				
		Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	17	19	15	5	39	2 blind shells. 2 broke up.
9-pr. B. L.	15	4	2	4	10	2 blind shells. 5 broke up. 2 premature.
9-pr. M. L.	18	64	23	47	134	3 blind shells. 2 targets down.

3rd position, 1,750 yards.

	No. of Rounds.	Effects on Targets.				
		Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	24	31	5	4	40	9 broke up. 2 targets down.
9-pr. B. L.	22	27	11	27	65	1 blind shell. 5 broke up.
9-pr. M. L.	25	51	19	23	93	2 broke up. 3 premature.

11TH EXPERIMENT. September 20th.

Practice at 3 separate single rows of targets, 6 feet by 6 feet by 2 inches, frontage of each set 42 feet. Distance unknown to battery Officers, but known to Officers Commanding, who advisedly gave out a range of 100 yards in excess and in deficit of known range.

Each half battery brought into action at two positions :—

1st position.—Shrapnel shell with time fuzes. 5 rounds per gun. Total,—15 rounds from each half battery. Distance given, 1,200 for 1,300 yards.

	Effects on Targets.				
	Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	60	16	13	89	Fuzes all about 150 yards short. blind shells.
9-pr. B. L.	37	23	26	86	1 blind shell. 1 broke up on graze.
9-pr. M. L.	34	13	14	61	1 blind shell.

2nd position,—Segment shell with percussion fuzes. 5 rounds per gun. Total,—15 rounds from each half battery.

Distance given 1,300 for 1,200 yards.

	Effects on Targets.				
	Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	11	1	..	12	1 blind shell. 1 fuze premature. All shells grazed 150 yards over.
9-pr. B. L.	2	..	3	5	
9-pr. M. L.	3	..	..	3	2 blind shells.

12TH EXPERIMENT. September 21st and 22nd.

Practice against 3 rows of targets 6 feet by 6 feet by 2 inches, 15 feet apart, frontage 42 feet; representing columns of infantry at known or unknown distances.

Fired 5 rounds per gun, shrapnel shell with time fuzes, at three different ranges. Total,—15 rounds from each half battery.

1st position.—Distance judged, 1,550 yards.

	Effects on Targets.				
	Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	58	36	43	137	
9-pr. B. L.	39	23	27	89	
9-pr. M. L.	127	43	41	211	1 blind shell.

12TH EXPERIMENT—*continued.*

2nd position.—Distance judged, 1,400 yards.

	Effects on Targets.				
	Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	302	46	68	416	1 blind shell. 5 targets down.
9-pr. B. L.	142	21	65	228	4 blind shells. 1 target down.
9-pr. M. L.	418	61	62	541	5 targets down.

3rd position.—Distance judged, 1,300 yards.

	Effects on Targets.				
	Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	360	47	71	478	1 blind shell. 5 targets down. 1 premature time fuze.
9-pr. B. L.	157	47	84	288	2 blind shells. 5 targets down.
9-pr. M. L.	345	113	95	553	1 blind shell. 4 targets down.

13TH EXPERIMENT. September 21st and 22nd.

Repeated with Segment shell with percussion fuzes.

1st position.—Distance judged, 1,550 yards.

	Effects on Targets.				
	Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	135	66	87	288	7 shells broke up on graze. 2 targets down.
9-pr. B. L.	116	82	90	288	1 blind shell. 3 broke up on graze. 3 targets down. 1 premature fuze.
9-pr. M. L.	69	21	48	138	

2nd position.—Distance judged, 1,400 yards.

	Effects on Targets.				
	Through.	Lodged.	Struck.	Total	
12-pr. B. L.	433	62	101	596	1 target down.
9-pr. B. L.	94	97	139	330	1 blind shell. 3 broke up on graze. 1 premature fuze.
9-pr. M. L.	201	57	103	361	1 blind shell. 1 target down.

3rd position.—Distance judged, 1,300 yards.

	Effects on Targets.				
	Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	406	73	103	582	1 blind shell. 7 targets down.
9-pr. B. L.	164	88	154	406	2 blind shells. 4 broke up on graze. target down.
9-pr. M. L.	296	84	131	511	8 targets down.

14th Experiment. September 27th.

30 rounds of case shot per gun fired at 2 rows of targets, each row 45 feet by 9 feet by 2 inches.

15 rounds at 350 yards.
15 „ „ 250 „

	Effects on Targets.				
	Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	549	206	177	932	3 did not break up.
9-pr. B. L.	476	133	142	751	13 did not break up. 7 broke on graze in front of target.
9-pr. M. L.	352	196	98	646	6 did not break up.

15th Experiment. September 28th.

5 rounds per gun, Shrapnel shell with time fuzes: fired against 3 rows of targets representing columns of troops. Ranges 2,300 and 2,000 yards. { 45 ft. × 9 ft. × 2 ins. / 42 „ × 6 „ × 2 „ }

1st position, 2,300 yards. 15 rounds from each half battery.

	Effects on Targets.				
	Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	22	5	9	36	1 blind shell.
9-pr. B. L.	63	21	40	124	1 ditto.
9-pr. M. L.	63	21	40	124	3 ditto.

2nd position, 2,000 yards. 15 rounds from each half battery.

	Effects on Targets.				
	Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	182	51	71	304	1 blind shell. 1 target down.
9-pr. B. L.	202	35	47	284	
9-pr. M. L.	324	79	126	529	1 blind shell. 1 broke up.

16th Experiment. September 29th.

Repeated with Segment Shell with percussion fuzes. 15 rounds from each half battery.
1st position, 2,300 yards.

	Effects on Targets.				
	Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	170	37	24	231	11 broke up.
9-pr. B. L...	82	73	65	220	1 blind shell. 2 premature. 3 broke up.
9-pr. M. L.	106	25	30	161	1 blind shell. 2 broke up.

2nd position, 2,000 yards. 15 rounds from each half battery.

	Effects on Targets.				
	Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	87	11	33	131	1 blind shell. 12 broke up. 1 target down.
9-pr. B. L.	78	49	55	182	2 blind shells. 1 broke up. 1 premature. 1 target down.
9-pr. M. L.	189	83	111	383	3 broke up. 4 doubtful. 2 targets down.

17TH EXPERIMENT. September 30th.

Repeated with common shell with percussion fuzes. 30 rounds from each half battery. Range 1,750 yards.

	Effects on Targets.				
	Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	171	36	51	258	8 blind shells. 4 targets down.
9-pr. B. L.	163	25	43	231	4 blind shells.
9-pr. M. L.	192	68	128	388	2 blind shells. 5 broke up. 1 target down.

18TH EXPERIMENT. September 20th.

Fired against separate sets of single rows of targets 6 feet by 6 feet by 2 inches, 15 feet apart, frontage 42 feet, representing columns of infantry at unknown distances from 1,500 yards to 800 yards, advancing and retiring at 5 different positions. 2 rounds shrapnel shell with time fuzes fired at each position. Total, 30 rounds from each half battery.

	Effects on Targets.				
	Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	136	26	27	189	2 blind shells. 1 target down in the fifth position.
9-pr. B. L.	55	48	27	130	2 blind shells. 3 targets down. 1 premature.
9-pr. M. L.	314	51	46	411	4 blind shells.

19TH EXPERIMENT. September 20th.

Repeated with Segment shell with percussion fuzes.

	Effects on Targets.				
	Through.	Lodged.	Struck.	Total.	
12-pr. B. L.	246	38	46	330	3 blind shells. 6 targets down.
9-pr. B. L.	91	61	89	241	
9-pr. M. L.	79	33	16	128	3 blind shells.

20TH EXPERIMENT.

To ascertain which system can be most readily entrenched. The time required, and the efficiency of the cover, in each case, being specially noted.

A convenient site having been selected in rear of a slight irregularity in the ground one gun of

each nature was entrenched by its own detachment, using the tools at their disposal, viz., picks, 2; spades, 2; shovels, 2.

The soil was easy sand covered with heather, the sods of which, when cut, were used to revet the work.

The time employed for each nature of gun was as follows:—

9-pr. M.L.	21 minutes.
12-pr. B. L.	19 „
9-pr. B.L.	18 „

The pits were constructed upon a similar system, viz., that of a sunken battery.

9-pr. M.L.

The 9-pr. M.L., although not very satisfactorily covered, experienced considerable difficulty in loading; and the number who sponged the gun was very much exposed during this operation, as the sponge was not readily turned, owing to the proximity of the parapet; and, indeed, in order to facilitate this duty, it became necessary to extend the excavation further to the rear than was actually necessary to enable the gun to recoil.

The No. serving the vent was also exposed, together with No. 1, and the No. at the trail handspike was entirely exposed at the time of laying the gun.

12-pr. B.L.

This pit afforded very good cover for the detachment; and when seen from the front, sheltered every No. excepting the No. 1, who was partially exposed during the time he was laying the gun; the traversing bar obviating the necessity of there being a man at the point of the handspike.

9-pr. B.L.

The pit for this gun was complete in the shelter it afforded to the detachment, excepting the No. 1 during the operation of laying; the absence of the traversing arrangement required a man at the trail handspike, who was considerably exposed.

General Observations.

From the above it will be seen that in moderately easy ground fair cover can be obtained for any of these guns in half an hour, but that the 9-pr. M.L. requires more excavation from front to rear, on account of its system of loading, while from its lesser height, the gun may be more readily covered; this advantage does not hold good with the detachment. At the same time the B.L. guns, although requiring a slight increase of height of parapet, need only have a small space for recoil, and in the case of the 12-pr. with its traversing bar, allows the detachment to be almost completely under cover.

TABLE showing effects produced as compared with the weight of ammunition expended.

Shrapnel Shell using Time Fuzes.

No. of Experiment.	12-pr. B.L.R.				9-pr. B.L.R.				9-pr. M.L.R.			
	Number of rounds fired by half battery.	Weight of ammunition expended. Shells 12 lbs. Powder 1 lb. 8 ozs.		Results in hits.	Number of rounds fired by half battery.	Weight of ammunition expended. Shell 9 lbs. Powder 1 lb. 2 oz.		Results in hits.	Number of rounds fired by half battery.	Weight of ammunition expended. Shell 9 lbs. Powder 1 lb. 12 oz.		Results in hits.
		lbs.	ozs.			lbs.	ozs.			lbs.	ozs.	
1	15	202	8	105	15	151	14	93	15	161	4	146
3	15	202	8	36	15	151	14	24	15	161	4	54
5	15	202	8	151	15	151	14	20	15	161	4	81
7	15	202	8	53	15	151	14	35	15	161	4	42
9	10	135	0	68	12	121	8	75	15	161	4	142
..	15	202	8	59	17	172	2	148	19	204	4	244
..	14	189	0	59	17	172	2	127	17	182	12	203
11	15	202	8	89	15	151	14	86	15	161	4	61
12	15	202	8	157	15	151	14	89	15	161	4	211
..	15	202	8	416	15	151	14	228	15	161	4	541
..	15	202	8	478	15	151	14	288	15	161	4	563
15	15	202	8	36	15	151	14	124	15	161	4	124
..	15	202	8	304	15	151	14	284	15	161	4	529
18	30	405	0	189	30	303	12	130	30	322	8	411
..	219	2,956	8	2,200	226	2,288	4	1,751	231	2,483	4	3,352
Segment Shell using Percussion Fuzes.												
2	15	202	8	200	15	151	14	116	15	161	4	13
4	15	202	8	70	15	151	14	46	15	161	4	10
6	15	202	8	227	15	151	14	28	15	161	4	80
8	15	202	8	21	15	151	14	25	15	161	4	22
10	22	297	0	228	17	172	2	32	22	236	8	127
..	17	229	8	39	15	151	14	13	18	193	8	134
..	24	324	0	40	22	222	12	65	25	268	12	93
11	15	202	8	12	15	151	14	5	15	161	4	3
13	15	202	8	288	15	151	14	288	15	161	4	138
..	15	202	8	596	15	151	14	330	15	161	4	361
..	15	202	8	582	15	151	14	406	15	161	4	511
16	15	202	8	231	15	151	14	220	15	161	4	161
..	15	202	8	131	15	151	14	182	15	161	4	383
19	30	405	0	330	30	303	12	241	30	322	8	128
..	243	3,280	8	2,995	234	2,369	4	1,997	245	2,633	12	2,164
Common Shell using Percussion Fuzes.												
17	30	405	0	258	30	303	12	231	30	322	0	388
Case Shot.												
14	30	405	0	932	30	303	12	751	30	322	0	646

Shrapnel Shell.

	Weight.	Expended, rounds.	Weighing, lbs.	Scored hits.	Hits per lb.	Hits per round.
	cwt.					
I. 12-pr. B. L. ..	8	219	2,956	2,200	0·744	10·04
9-pr. B. L. ..	6	226	2,288	1,751	0·765	7.75
9-pr. M. L. ..	8	231	2,483	3,352	1·350	14.51
Segment Shell.						
II. 12-pr. B. L. ..	8	243	3,280	2,995	0·913	12.32
9-pr. B. L. ..	6	234	2,369	1,997	0·842	8·53
9-pr. M. L. ..	8	245	2,633	2,164	0·822	10·75
Common Shell.						
III. 12-pr. B. L. ..	8	30	405	258	0·637	8·60
9-pr. B. L. ..	6	30	303	231	0·762	7·70
9-pr. M. L. ..	8	30	322	388	1·205	12·93

APPENDIX No. III.

TABLE 1.—Shrapnel *versus* Segment.

Description.	Experiments.	Range.	No. of Rounds.	9-pr. M. L. Effect. Shrapnel.	9-pr. M. L. Effect. Segment.	9-pr. M. L. Per Cent. Shrapnel.	9-pr. M. L. Per Cent. Segment.	9-pr. B. L. Effect. Shrapnel.	9-pr. B. L. Effect. Segment.	9-pr. B. L. Per Cent. Shrapnel.	9-pr. B. L. Per Cent. Segment.	12-pr. B. L. Effect. Shrapnel.	12-pr. B. L. Effect. Segment.	12-pr. B. L. Per Cent. Shrapnel.	12-pr. B. L. Per Cent. Segment.
		Yards.													
Known Ranges against 1 Row of Targets	1 & 2	1,200	15	146	13	*92*	*8*	93	116	*44*	*56*	105	200	*34*	*66*
	3 & 4	1,000	15	54	10	*84*	*16*	24	46	*34*	*66*	36	70	*34*	*66*
Known Ranges against 3 Rows ..	15	2,300	15	124	161	*43*	*57*	124	220	*36*	*64*	36	231	*13*	*87*
	& 16	2,000	15	529	383	*58*	*42*	284	182	*61*	*39*	304	131	*70*	*30*
Unknown Ranges against 1 Row of Targets	5 & 6	1,400	15	81	80	*50*	*50*	20	28	*42*	*58*	151	227	*40*	*60*
	7 & 8	Unknown	15	42	22	*66*	*34*	35	25	*58*	*42*	53	21	*72*	*28*
	18 & 19	800 to 1,500	30	411	128	*76*	*24*	130	241	*35*	*65*	189	330	*36*	*64*
	9	1,400	By time	203	93	*68*	*32*	127	65	*66*	*34*	59	40	*60*	*40*
	&	1,500	By time	244	134	*64*	*36*	148	10	*93*	*7*	89	39	*69*	*31*
	10	1,750	By time	142	127	*53*	*47*	75	82	*48*	*52*	68	228	*23*	*77*
Unknown Ranges against 3 Rows ..	12	1,550	15	211	138	*60*	*40*	89	288	*27*	*76*	137	288	*32*	*68*
	&	1,400	15	541	361	*60*	*40*	228	330	*40*	*60*	416	596	*41*	*59*
	13	1,300	15	562	511	*52*	*48*	288	406	*41*	*59*	478	582	*45*	*55*
Range purposely in error against 1 Row ..	11	1,200 for 1,300	15	61	3	*95*	*5*	86	5	*94*	*6*	89	12	*88*	*12*
Total effect	..	..	..	3,351	2,164	..	..	1,751	2,044	..	..	2,210	2,995	..	..

	9-pr. M. L. Shrapnel.	9-pr. M. L. Segment.	9-pr. B. L. Shrapnel.	9-pr. B. L. Segment.	12-pr. B. L. Shrapnel.	12-pr. B. L. Segment.
Number of Rounds fired, Experiment 9 and 10	15	22	12	17	10	22
	19	18	17	15	15	17
	17	25	17	22	14	24

APPENDIX No. IV.

Table 2.—9-pr. M. L. Guns *versus* 9-pr. B. L. Guns.

	Experiments.	Range.	Number of Rounds.	M. L. Shrapnel. v. B. L. Segment.				M. L. Shrapnel. v. B. L. Shrapnel.				M. L. Segment. v. B. L. Segment.				M. L. Shrapnel and Segment. v. B. L. Shrapnel and Segment.			
				Effect.		Per Cent.		Effect.		Per Cent.		Effect.		Per Cent.		Effect.		Per Cent.	
				M. L.	B. L.	M. L.	B. L.	M. L.	B. L.	M. L.	B. L.	M. L.	B. L.	M. L.	B. L.	M. L.	B. L.	M. L.	B. L.
		Yards.																	
Known Ranges against, 1 Row of Targets	1 & 2	1,200	15	146	116	*53*	*47*	146	93	*60*	*45*	13	116	*10*	*90*	159	209	*43*	*57*
Known Ranges against, 1 Row of Targets	3 & 4	1,000	15	54	46	*54*	*46*	54	24	*69*	*31*	10	46	*18*	*82*	64	70	*48*	*52*
Known Ranges against, 3 Rows	15	2,300	15	81	28	*74*	*26*	81	20	*80*	*20*	80	28	*74*	*26*	161	48	*77*	*23*
	& 16	2,000	15	42	25	*63*	*37*	42	35	*55*	*45*	22	25	*47*	*53*	64	40	*52*	*48*
Unknown Ranges, against, 1 Row of Targets	5 & 6	1,400	15	203	65	*76*	*24*	203	127	*61*	*39*	93	65	*59*	*41*	296	192	*61*	*39*
	7 & 8	Unknown	15	244	10	*96*	*4*	244	148	*62*	*38*	134	10	*93*	*7*	378	158	*70*	*30*
	18 & 19	800 to 1,500	30	142	82	*64*	*36*	142	75	*65*	*35*	127	82	*60*	*40*	269	157	*63*	*37*
	9	1,400	By time	411	241	*63*	*37*	411	130	*76*	*24*	128	241	*35*	*65*	539	371	*59*	*41*
	&	1,500	By time	124	222	*36*	*64*	124	124	*50*	*50*	161	220	*42*	*58*	285	344	*45*	*55*
	10	1,750	By time	529	182	*74*	*26*	529	284	*64*	*36*	383	182	*68*	*32*	912	466	*64*	*34*
Unknown Ranges, against, 3 Rows	12	1,550	15	211	288	*58*	*42*	211	89	*70*	*30*	138	288	*32*	*68*	349	377	*48*	*52*
	&	1,400	15	541	330	*62*	*38*	541	228	*70*	*30*	361	330	*52*	*48*	902	558	*62*	*38*
	13	1,300	15	562	406	*58*	*42*	562	288	*66*	*34*	511	406	*56*	*44*	1,073	694	*60*	*40*
Range purposely in Error, against 1 Row ..	11	1,200 for 1,300	15	61	5	*92*	*8*	61	86	*41*	*59*	3	5	*38*	*62*	64	91	*41*	*59*
Total Effect	..	..	..	3,351	2,044	..	..	3,351	1,751	..	..	2,164	2,044	..	..	5,515	3,795	..	..

	Experiments.	Range.	Rounds.	Description.	M. L.	B. L.	M. L.	B. L.
		Yards.						
Known Range against 3 Rows of Targets ..	17	1,750	30	Common Shell	388	231	*63*	*37*
Known Range against 2 Rows of Targets ..	14	250 & 350	30	Case Shot	646	751	*46*	*54*

APPENDIX No. V.

TABLE 3.—9-pr. M. L. Gun *versus* 12-pr. B. L. Gun.

Description.	Experiments.	Range.	No. of Rounds.	M. L. Shrapnel v. B. L. Segment. Effect. M. L.	B. L.	Per Cent. M. L.	B. L.	M. L. Shrapnel v. B. L. Shrapnel. Effect. M. L.	B. L.	Per Cent. M. L.	B. L.	M. L. Segment v. B. L. Segment. Effect. M. L.	B. L.	Per Cent. M. L.	B. L.	M. L. Shrapnel and Segment v. B. L. Shrapnel and Segment. Effect. M. L.	B. L.	Per Cent. M. L.	B. L.
		Yards.																	
Known Ranges against 1 Row of Targets	1 & 2	1,200	15	146	200	*42*	*58*	146	105	*58*	*42*	13	200	*6*	*94*	159	305	*34*	*66*
	3 & 4	1,000	15	54	70	*45*	*55*	54	36	*60*	*40*	10	70	*13*	*87*	64	106	*38*	*62*
Known Ranges against 3 Rows ..	15	2,300	15	81	227	*26*	*74*	81	151	*35*	*65*	80	227	*26*	*74*	161	378	*30*	*70*
	& 16	2,000	15	42	21	*67*	*33*	42	53	*44*	*56*	22	21	*51*	*49*	64	74	*46*	*54*
Unknown Ranges against 1 Row of Targets	5 & 6	1,400	15	203	40	*83*	*17*	203	59	*77*	*23*	93	40	*70*	*30*	296	99	*75*	*25*
	7 & 8	Unknown	15	244	39	*86*	*14*	244	89	*73*	*27*	134	39	*77*	*23*	378	128	*75*	*25*
	18 & 19	800 to 1,500	30	142	228	*38*	*62*	142	68	*68*	*32*	127	228	*36*	*64*	269	296	*48*	*52*
	9 & 10	1,400	By time	411	330	*55*	*45*	411	189	*68*	*32*	128	330	*28*	*72*	539	519	*51*	*49*
		1,500		124	221	*36*	*64*	124	36	*77*	*23*	161	231	*42*	*58*	285	267	*52*	*48*
		1,750		529	131	*80*	*20*	529	309	*63*	*37*	383	131	*75*	*25*	912	435	*68*	*32*
Unknown Ranges against 3 Rows ..	12	1,550	15	211	288	*58*	*42*	211	37	*60*	*40*	138	288	*32*	*68*	349	425	*45*	*55*
	&	1,400	15	541	596	*48*	*52*	541	416	*57*	*43*	361	596	*36*	*62*	902	1,012	*47*	*53*
	13	1,300	15	562	582	*49*	*51*	562	478	*54*	*46*	511	582	*48*	*52*	1,073	1,060	*50*	*50*
Range purposely in error against 1 Row ..	11	1,200 for 1,300	15	61	12	*84*	*16*	61	89	*40*	*60*	3	12	*20*	*80*	64	101	*39*	*61*
Total effect	..	..	..	3,351	2,995	..	..	3,351	2,210	..	..	2,164	2,210	..	..	5,515	5,205	..	..

	Experiments.	Range.	Rounds.	Description.	M. L.	B. L.	M. L.	B. L.
		Yards.						
Known Range against 3 Rows of Targets ..	17	1,750	30	Common Shell	388	258	*60*	*40*
Unknown Range against 2 Rows of Target ..	14	250	30	Case Shot	646	932	*41*	*59*

APPENDIX No. VI.

TABLE 4.—ABSTRACT showing Result of 16 Experiments.

	Number of Experiments.	Table No. 1. Shrapnel v. Segment.						Table No. 2. 9-pounder M. L. v. 9-pounder B. L.								Table No. 3. 9-pounder M. L. v. 12-pounder B. L.							
		9-pr. M. L.		9-pr. B. L.		12-pr. B.L.		M. L.	B. L.	M. L.	B. L.	M. L.	B. L.	M. L.	B. L.	M. L.	B. L.	M. L.	B. L.	M. L.	B. L.	M. L.	B. L.
		Shrapnel.	Segment.	Shrapnel.	Segment.	Shrapnel.	Segment.	Shrapnel.	Segment.	Shrapnel.	Shrapnel.	Segment.	Segment.	Segment and Shrapnel.	Shrapnel and Segment.	Shrapnel.	Segment.	Shrapnel.	Shrapnel.	Segment.	Segment.	Shrapnel and Segment.	Shrapnel and Segment.
Range Known against: 1 Row of Targets ..	2	2	0	0	2	0	2	2	0	2	0	0	2	0	2	0	2	2	0	0	2	0	2
Range Known against: 3 Rows of Targets ..	2	1	1	1	1	1	1	1	1	1½	½	1	1	1	1	1	1	2	0	1	1	2	0
Range Unknown against: 1 Row of Targets: Deliberate	3	2½	½	1	2	1	2	3	0	3	0	1	2	3	0	2	1	1	2	1	2	1	2
Range Unknown against: 1 Row of Targets: By Time..	3	3	0	2	1	2	1	3	0	3	0	3	0	3	0	2	1	3	0	2	1	2	1
Range Unknown against: 3 Rows of Targets ..	3	3	0	0	3	0	3	3	0	3	0	2	1	2	1	1	2	3	0	0	3	½	2½
Ranges purposely in Error against 1 Row of Targets	1	1	0	1	0	1	0.	1	0	0	1	0	1	0	1	1	0	0	1	0	1	0	1
Total	14	12½	1½	5	9	5	9	13	1	12½	1½	7	7	9	5	7	7	11	3	4	10	5½	8½
Total Effect	..	3351	2164	1751	2044	2210	2995	3351	2044	3351	1751	2164	2044	5515	3795	3351	2995	3351	2210	2164	2210	5515	5205

Range Known against: 3 Rows of Targets	1	Common Shell	9-pounder M. L.	1	9-pounder B. L.	0	9-pounder M. L.	1	12-pounder B. L.	0
Range Known against: 2 Rows of Targets	1	Case Shot	9-pounder M L.	0	9-pounder B. L.	1	9-pounder M. L.	0	12-pounder B. L.	1

APPENDIX No. VII.

TABLE showing Comparative Cost of a Sub-division of a 12-pr. and 9-pr. Breech-Loading and 9-pr. Muzzle-Loading Battery, including Gun, Gun-Carriage, Limber Wagon, Ammunition and Stores, Two Lines of Wagons.

Quantity Supplied.	Nature of Stores.	12-pr. Breech-Loading Wrought-Iron Gun of 8 cwt.	9-pr. Breech-Loading Wrought-Iron Gun of 6 cwt.	9-pr. Muzzle-Loading Bronze Gun of 8 cwt.*
		£ s. d.	£ s. d.	£ s. d.
—	Gun complete with sights	99 0 0	88 10 0	74 0 0
	Wrought-Iron { Carriage, Gun ..	79 1 6	79 1 6	79 1 6
	Wrought-Iron { Gun Limber	68 10 4	68 12 4	68 12 4
—	Wrought-Iron { Wagon Body.. ..	77 19 4	78 3 11	78 3 11
	Wrought-Iron { Limber	68 10 4	68 12 4	61 12 4
	Wrought-Iron { 2nd Line of Wagons..	146 9 8	146 16 3	146 16 3
96	Shells, Segment..	13 12 8	12 7 8	12 7 8
72	„ Shrapnel..	24 13 8	21 14 8	18 18 3
24	„ Common..	3 12 8	3 4 7	3 10 5
22	Shot, Case	2 4 1	1 17 10	1 18 8
90	Fuze, Time	3 14 5	3 14 5	2 11 10
120	„ Percussion	6 9 5	6 9 5	6 9 5
300	Tubes	1 2 7½	1 2 7½	1 2 7½
214	Cartridge, filled	19 14 8	16 18 1	18 17 2
12	Cylinders, tin-tube	0 2 1	0 2 1	0 2 1
10	Boxes, Tin, Fuze, Percussion	1 11 1	1 11 1	1 11 1
18	Cylinder, Tin, Fuze, Time	0 3 5½	0 3 5½	0 3 5½
96	Bursters, Iron	2 4 3	2 2 11	2 2 11
	Total	618 16 3	601 5 2	585 1 11

* The difference in cost between a muzzle-loading bronze gun and a gun made of wrought-iron with steel tube is only 12*l.* in favour of the former.

APPENDIX No. VIII.

LIST of Additional Stores carried by each Battery of Breech-Loading Guns (not required with Muzzle-Loading Guns).

Number.	Nature of Stores.	Cost. £	s.	d.
6	Bags, serge, blue, for 15 blank 3½ drams small-arm cartridges.. ..	0	1	5¼
3	Bits, vent, Armstrong	0	12	6
12	Bushes, copper, spare .. Breech..	4	18	0
12	Bushes, copper, spare .. Vent-piece	0	12	0
6	Buckets, wood, sponge	5	5	0
3	Cans, tin, oil, lubricating..	0	10	6
90	Cartridges, small-arm, blank, 3½ drams	0	1	8¾
216	Cloths, sponge	1	16	0
6	Covers, vent, slot or apron	1	16	6
60	Cups, tin	0	11	5½
1	Implements, facing .. .. set	9	14	8
3¾	Oil, Lucca, pints	0	1	11¼
12	Pieces, vent, spare	39	4	0
12	Pins, iron, keep lever, spare	1	0	0
12	Rings, copper, vent-piece, spare	2	2	0
6	Tampions, wood, with lanyards	0	17	0
1	Tools, special, for repairing Armstrong Guns, sets, *vide* List, Appendix IX...	16	1	4½
	Total	85	6	1

APPENDIX No. IX.

LIST of special and additional tools required for Smiths' and Armourers' use, for repairing Armstrong guns and carriages in the field or garrison.

		Rate.	Amount.
			£ s. d.
Brace, ratchet, 9-inch	1	..	0 10 6
Can, oil. lubricating	1	..	0 1 0
Chisels, cross-cut, 18-inch	2	1s. 6d. each.	0 3 0
,, ,, 7-inch	1	..	0 0 6
Drills, steel, for brace, No. 1	1	per set	0 7 9
,, 2	1		
,, 3	1		
,, 4	1		
,, 5	1		
,, 6	1		
,, 7	1		
8	1		
,, 9	1		
,, 10	1		
,, 11	1		
Drifts, steel { upsetting, 40 and 110-pr	1	..	0 1 1
Drifts, steel { vent, 20-pr.	1	..	0 1 0
Drifts, steel { bouches, 12-9-6-pr.	1	..	0 0 11
Drivers, screw { 5 inch	1	..	0 0 10
Drivers, screw { bent	1	..	0 2 6
Files, bastard, flat taper 10 inch	6	5s. 6d. each	1 13 0
,, ,, ,, 8 ,,	4	3s. 9d. ,,	0 15 0
,, ,, safe-edge 12 ,,	1	..	0 9 2
,, ,, ,, 10 ,,	1	..	0 6 5
,, ,, square taper, 10 ,,	2	5s. 6d. each	0 11 0
,, ,, ,, 8 ,,	1	..	0 4 0
,, ,, ,, parallel safe-edge, 2 sides, 6 inch	1	..	0 3 9
,, ,, round taper 12 inch	2	8s. 8d. each	0 17 4
,, ,, ,, 8 ,,	2	4s. 0d. ,,	0 8 0
,, ,, ,, 6 ,,	1	..	0 2 10
,, ,, ,, 5 ,,	1	..	0 2 4
,, ,, ½ ,, 10 ,,	4	5s. 10d. each	0 3 4
,, ,, ,, ,, 6 ,,	1	..	0 2 10
,, ,, feather-edge 6 ,,	1	.	0 5 10
,, ,, knife 9 ,,	1	..	0 8 8
,, ,, ,, 8 ,,	1	..	0 7 0
,, ,, ,, 6 ,,	3	4s. 11d. each	0 14 9
,, ,, warding 5 ,,	2	2s. 2d. ,,	0 4 4
,, ,, ,, cut out edge 3½ inch	2	1s. 10d. ,,	0 3 8
,, second cut, safe edge 6 ,, square	1	..	0 3 4
,, ,, ,, 8 ,, ,,	1	..	0 4 11
,, ,, ,, 8 ,, flat	1	..	0 4 6
,, smooth, flat, ,, 12 ,,	1	..	0 12 2
,, ,, ,, ,, 10 ,,	1	..	0 8 2
,, ,, ,, ,, 8 ,,	1	..	0 5 10
,, ,, ,, ,, 4 ,,	1	..	0 2 9
,, ,, ½ round taper 8 ,,	1	..	0 5 5
,, ,, ,, 6 ,,	1	..	0 3 9
,, ,, ,, 4 ,,	1	..	0 2 9
,, ,, knife-edge 6 ,,	3	6s. 4d.	0 19 0
Handles, file, large	3	1½d.	0 0 4½
,, ,, medium	3	1¼d.	0 0 3¾
,, ,, small	3	1d.	0 0 3
Hammers, fitter's, small handled, 8 oz.	1	..	0 1 6
Punches, brass, 7 inch	1	..	0 1 4
,, ,, 6 ,,	1	..	0 1 4
,, centre, steel	1	..	0 0 11
,, steel, 4 inch	1	..	0 1 10
,, ,, 6 ,,	1	..	0 1 10
,, ,, 7 ,,	1	..	0 1 10
,, ,, 13 ,,	1	..	0 2 1
,, copper, 5½ inch × ⅝ inch	1	..	0 1 7
Spanners, Mc Mahon's, 9 inch	1	..	0 5 0
,, double-ended, for sights	1	..	0 1 11
Tommies, steel, forked	1	..	0 0 5½
,, ,, plain	1	..	0 0 3¾
Boxes for special tools, with lock	1	..	0 10 0
The following materials are also supplied with the foregoing tools, viz.:—			
Cloth, emery, flour, sheets	6	1s. 4d. per quire	0 0 4
Cloths, sponge	12	3¼d. each	0 3 3
		..	£16 1 4½

APPENDIX No. X.

TABLE giving the results of practice at Shoeburyness for range and accuracy.

12-pr. B. L. R. Gun, No. 203. Total number of rounds previously fired, 1,295
9-pr. „ No. 1. „ „ „ 3,172
9-pr. M. L. R. Gun, No. 3. „ „ „ 74

12-pr. B. L. Gun.

Charge, 1·5 lb. Powder, R. L. G., 3. 8. 70.
Common Shell, weighted with sand, 11·375 lb.

Wind.	Date.	Number of rounds fired.	Corrected Elevation.	Mean Recoil.	Time of Flight corresponding to Mean Range.	Ranges. Minimum.	Ranges. Maximum.	Ranges. Mean.	Mean difference of Range.	Mean Observed Deflection.	Mean Reduced Deflection.	Probable Rectangle. Length.	Probable Rectangle. Breadth.	Probable Rectangle. Area.
			° ′	Feet.	Seconds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
	31. 8. 70.	10	1 10	9·4	2·06	659	710	692	12·1	0·9	0·42	35·44	1·23	44
3	„	10	3 5	9·0*	4·17	1,351	1,417	1,380	19·4	1·4	0·70	56·84	2·05	117
	„	10	5 3	10·6	6·44	2,002	2,082	2,046	15·0	1·0	0·72	43·93	2·11	93
	„	10	7 3	9·1	8·54	2,601	2,650	2,622	9·1	4·3	1·60	26·66	4·67	125
1-2	„	10	9 2	9·9	10·56	3,074	3,123	3,104	11·6	9·0	2·26	33·97	6·62	225

9-pr. B. L. Gun.

Charge, 1·125 lb. Powder, R. L. G., 3. 8. 70.
Common Shell, weighted with sand, 9 lb.

	31. 8. 70	10	1 11	6·9	1·99	618	656	633	11·1	0·9	0·36	32·52	1·05	34
	„	10	3 6	6·0	4·02	1148	1217	1190	17·7	1·9	0·88	51·87	2·58	134
1-2	„	10	5 4	6·3	6·02	1729	1794	1766	16·7	3·0	1·24	48·94	3·63	178
	„	10	7 3	6·2	8·00	2215	2316	2260	30·3	6·0	1·06	88·80	3·11	276
	„	10	9 3	6·0	9·81	2610	2722	2673	31·5	7·1	1·19	92·31	3·49	322

9-pr. M. L. Gun.

Charge, 1·75 lb. Powder, R. L. G., 1. 10. 69.
Common Shell, weighted with sand, 9 lb.

2	13. 1. 70	10	1 9	9·1	N. O.	718	791	763	15·9	0·8	0·44	46·57	1·29	60
„	„	10	3 4	8·5	„	1510	1583	1552	17·1	2·7	0·76	50·11	2·23	112
2†	„	10	5 3	7·7‡	„	2178	2251	2209	19·1	8·7	2·17	55·97	6·36	356
3	17. 1. 70	10	7 2	10·7	8·9	2613	2696	2665§	18·9	14·8§	0·76	56·05	2·24	126
„	„	10	9 2	10·3	11·0	3095	3150	3135	16·7	16·6	1·26	48·92	3·69	181

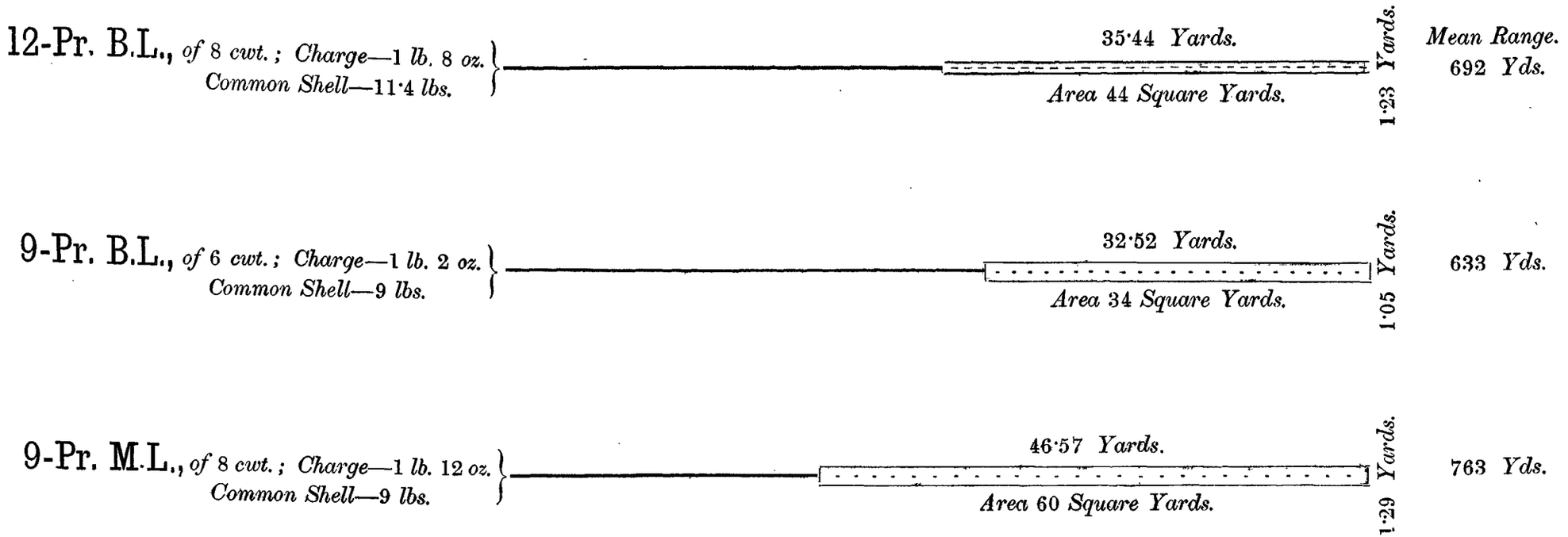
* Mean of 5; 5 not observed.
‡ Mean of 9.
† Shift of wind after first three rounds.
§ Mean of 9; 1 not observed.

M. L. versus B. L. RIFLED FIELD GUNS,

OF 3-INCH CALIBRE.

PROBABLE RECTANGLES.

Elevation 1°.



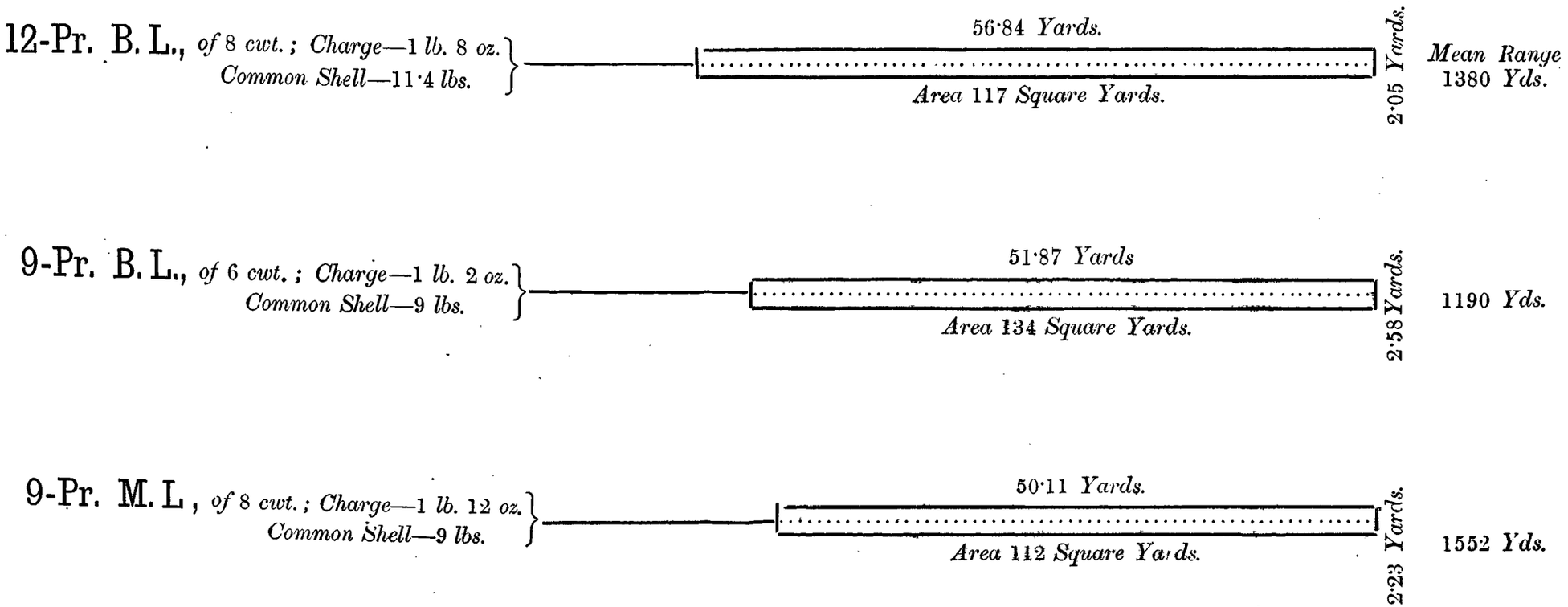
Scale 12 *Yards* = 1 *Inch.*

M. L. versus B. L. RIFLED FIELD GUNS,

OF 3-INCH CALIBRE.

PROBABLE RECTANGLES.

Elevation 3°



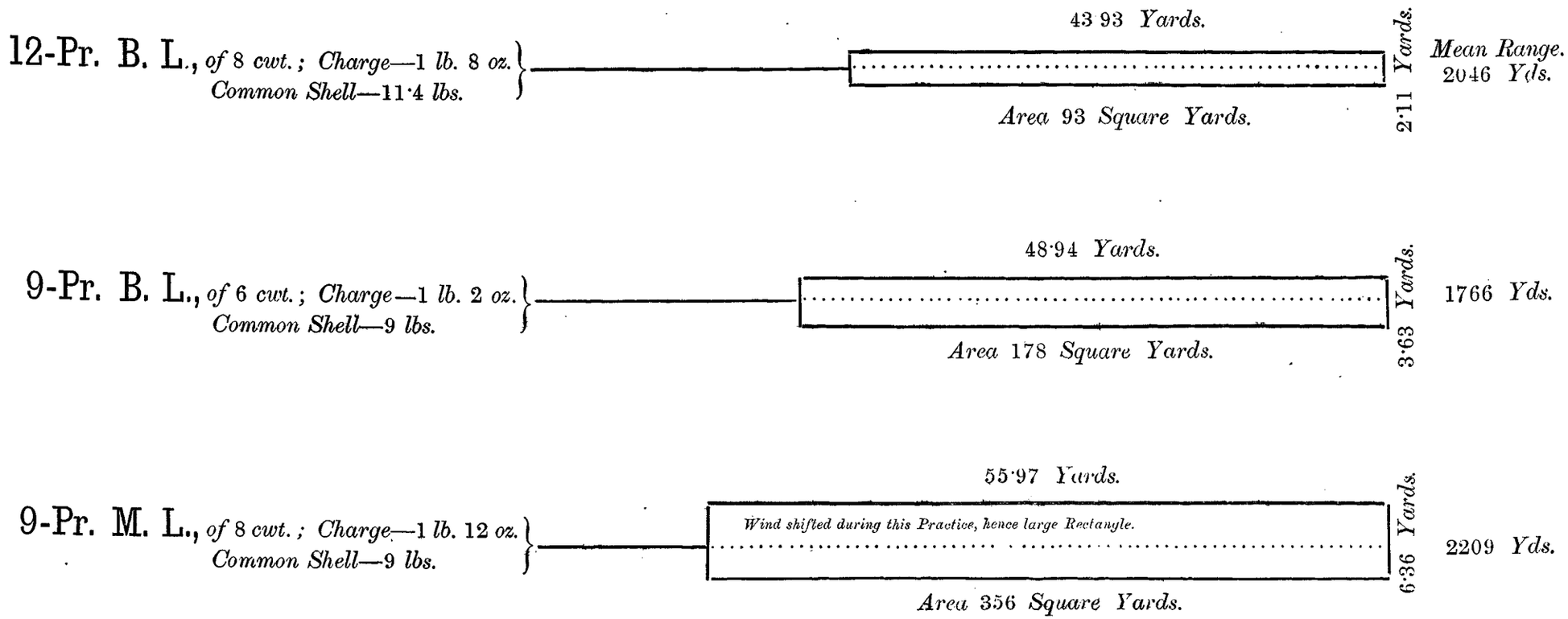
Scale 12 *Yards* = 1 *Inch.*

M. L. versus B. L. RIFLED FIELD GUNS,

OF 3-INCH CALIBRE.

PROBABLE RECTANGLES.

Elevation 5°.



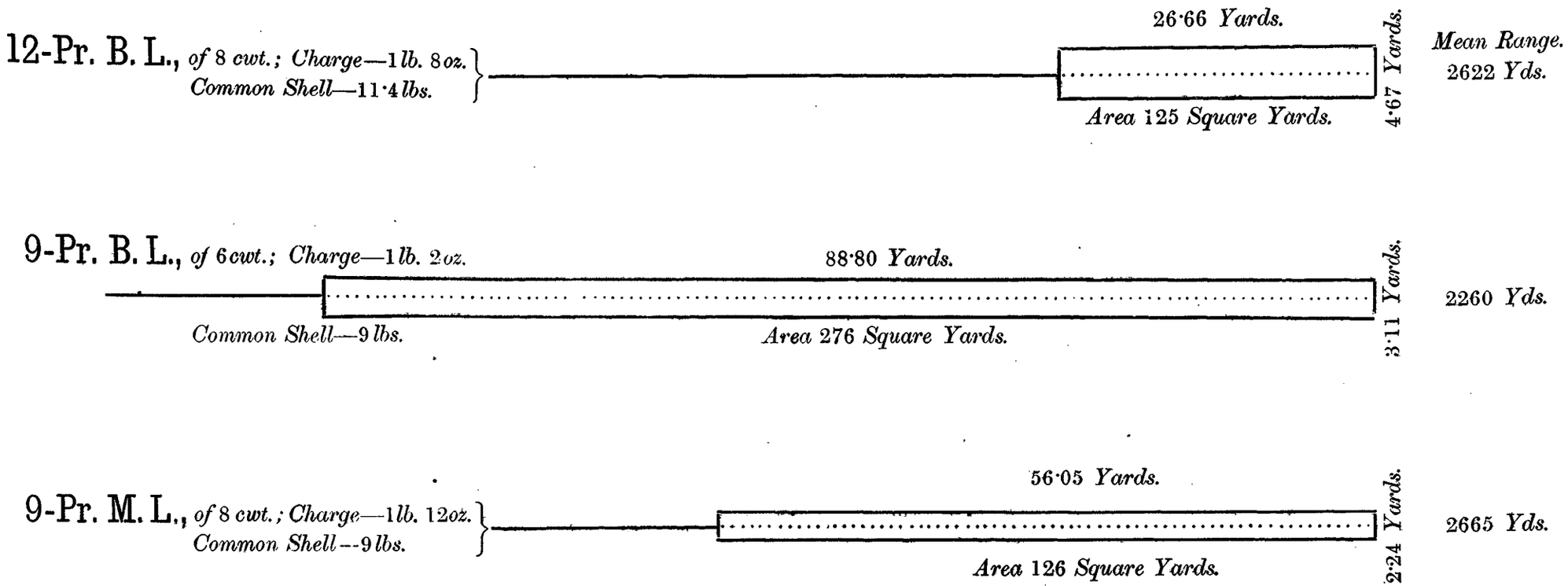
Scale 12 *Yards* = 1 *Inch.*

M. L. versus B. L. RIFLED FIELD GUNS,

OF 3-INCH CALIBRE.

PROBABLE RECTANGLES.

Elevation 7°.



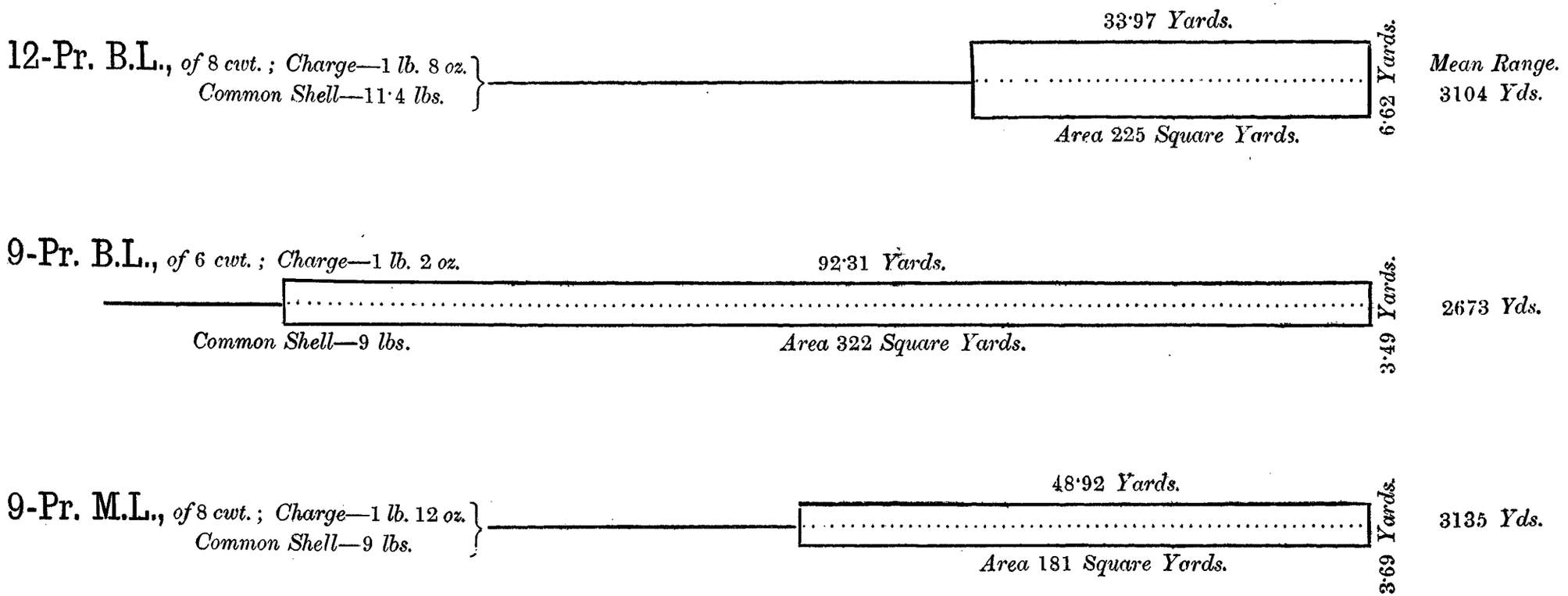
Scale—12 Yards = 1 Inch.

M. L. versus B. L. RIFLED FIELD GUNS,

OF 3-INCH CALIBRE.

PROBABLE RECTANGLES.

Elevation 9°.



Scale 12 Yards = 1 Inch.

REPORTS

OF

SPECIAL COMMITTEE

ON

MARTINI-HENRY BREECH-LOADING RIFLES.

Presented to both Houses of Parliament by Command of Her Majesty.

LONDON:
PRINTED BY GEORGE EDWARD EYRE AND WILLIAM SPOTTISWOODE,
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FOR HER MAJESTY'S STATIONERY OFFICE.

1871.

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FIRST REPORT

OF

SPECIAL COMMITTEE ON MARTINI-HENRY BREECH-LOADING RIFLES.

7669
2439

PRESIDENT:

Lieut.-Col. H. C. Fletcher, Scots Fusilier Guards.

MEMBERS:

Captain R. W. Haig, R.A., F.R.S.
Captain A. T. L. Chapman, 34th Regiment, District Inspector of Musketry.
Captain V. D. Majendie, R.A., Assistant Superintendent, Royal Laboratory.
Captain J. E. F. Aylmer, Unattached.
Lord Elcho, M.P.
E. Ross, Esq.

Lieut. B. de B. Tupper, R.A., Secretary.

War Office, 12th July 1870.

7669
2368
3/5/70.

IN accordance with directions received from the Secretary of State for War, the Committee have the honour to forward a report of the trials of the experimental Martini-Henry arms, issued to the troops at several stations at home and abroad, the School of Musketry, Hythe, and to H.M. ships "Excellent" and "Cambridge."

Acting on the report of the Committee on Breech-loading rifles, dated 28/5/69, 200 Martini-Henry arms were made at Enfield, and issued for trial with a sufficient quantity of ammunition. These arms were sent to various stations, 56 being retained in the United Kingdom, 30 being sent to Canada, 100 to India, 5 to the Cape of Good Hope, and 9 to H.M. ships abroad. The trials commenced on 1st January 1870, and are still in progress.

The reports already received from the Commanding Officers, from the District Inspectors of Musketry, and from the Captains of H.M. ships, are 50 in number; they include reports from regiments stationed in the United Kingdom and Canada; those from India, the Cape of Good Hope, and H.M. ships abroad not having as yet been received. The number of arms reported upon are consequently 86, and from these arms 137,308 rounds of ball and 52,432 rounds of blank cartridge have been fired, making an average of 1,597 rounds of ball and 608 rounds of blank cartridge fired from each arm.

Together with the experimental arms, certain instructions and questions, framed for the purpose of directing the attention of the Commanding Officers and others to the most important points on which to frame their reports, were issued by the Secretary of State for War, and the present report deals only with the answers to these questions.

Having carefully examined these reports, the Committee have prepared a summary and appended their remarks on the points to which their attention has been called. This summary, together with the observations of the Committee, are annexed.*

The opinions of the Committee are fully contained in these observations, but they are here presented in a condensed form with a view to direct attention to the more important points.

In nearly every instance the Commanding Officers of Regiments and others have compared the Martini-Henry arms with the Snider, and have based their reports on this comparison.

Accuracy of shooting.

As regards the accuracy of shooting of the Martini-Henry, the opinion is almost universal that it far excels that of the Snider, especially at the long distances.

Breech-action.

As regards facility of manipulation of the breech-action, the reports are also very satisfactory. Neither the breech-actions or barrels have shown symptoms of wear from the many and, in some instances, severe trials to which they have been exposed.

Attachment of stock.

The Committee desire to call attention to their remarks at page 12. Although in only two rifles the butt ends are reported as having become loose, the Committee propose to make some experiments to test the relative strength of whole and divided stocks.

Cartridges.

There are some complaints of the difficulty of loading when the cartridges have become bent, or when the paper which surrounds them has been rucked up; these difficulties have been overcome by the substitution of a shorter cartridge of a bottle-necked form on which there is no paper, and which has been provisionally approved.

Miss-fires.

The principal complaint has been the large proportion of miss-fires. This subject has been fully dealt with by the Committee in their remarks, page 27, to which they would draw particular attention. The evidence points to the weakness of the coil or main spring as the cause of these miss-fires, the striking blow on the cap having been insufficient. The miss-fires were more frequent in some rifles than in others, showing an apparent want of strength and uniformity in the several springs. In those rifles which gave the largest number of miss-fires, the per-centage of miss-fires has not been

* Presented to Parliament by Command in Session 1870.—*C.* 198, to which the references to pages in this First Report refer.

found to increase with the continued firing of the rifles, pointing to the conclusion that the springs were originally too weak, and did not lose strength by use. The attention of the Superintendent, Royal Small-Arms Factories, Enfield, having been directed to this defect at an early period of the trials, it was ascertained, after careful investigation, that the springs issued were weaker than those approved by Mr. Martini, being only 26 lb. instead of 40 lb. The springs were also weaker than those tried by the former Breech-loading Committee. Stronger springs were consequently issued, and miss-fires, judging by the reports received up to the present date, have practically ceased.

The Committee would, however, point to the necessity of carefully testing the uniformity and strength of the spiral springs previous to the issue of any future arms from the Royal Small-Arms Factories, Enfield.

Back sight.

The attention of the Committee has also been called to the position of the back sight, complained of as inconvenient when the arm is carried at the trail. This question involves consideration of the balance, length, and general weight of the arm, and has been partially dealt with in page 31, *vide* last paragraph. They would remark that with scarcely an exception the position of the sights are highly approved for purposes of aiming, the inconvenience being only felt when carrying the arm at the trail. As the primary object has thus been gained, no change of position which would affect the efficiency of the sight for shooting purposes can be recommended, but the Committee believe that by an alteration in the balance of the arm the inconvenience complained of will be removed, the sight remaining in its present position. This alteration can probably be effected by reducing the length of the arm, and possibly (a point to be ascertained by experiment) by diminishing the weight of the barrel at the muzzle-end. The diminution in the length of the arm has been recommended by the Committee on other grounds, *vide* page 31, and as the matter is one of great importance they request special instructions thereon, the former Committee having been restricted to the precise total length of 51 inches.

Length of arm.

Sword bayonet.

The length of the arm having reference to its employment as a pike, the Committee would observe that they have recommended for trial with the twelve arms, now being prepared at Enfield, a somewhat longer sword bayonet of a pattern submitted by Lord Elcho, and manufactured by Messrs. Wilkinson, Pall Mall. This weapon appears equally efficient as a bayonet with that issued with the Martini-Henry experimental arms, which has met with general approval. It is better balanced and shaped for purposes of cutting and chopping, has a better handle, and a longer saw; a matter considered of some importance in several reports.

A few other points require notice:—

Form of V of back sight.

1. The alteration in the form of the V of the back sight, *vide* page 16, recommended for trial in the short-actioned arms about to be issued to the troops.

Size of jag.

2. A diminution in the size of the jag, *vide* page 20; a matter to which the attention of the Superintendent, Royal Small-Arms Factories, Enfield, should be called.

Cleaning the arms.

3. The method of cleaning the rifles, *vide* page 30, to which the attention of those using the rifles should be called.

Cleaning rods work loose.

4. The statement that the cleaning rods work loose, *vide* page 32, to which the attention of the Superintendent, Royal Small-Arms Factories, Enfield, should be called.

Pouch and ball bag.

5. The inconvenient shape of the pouch and ball bag, *vide* page 32; a matter of considerable importance which will require attention when the pattern of the ammunition is finally settled.

The Committee having alluded shortly to the matters contained in the reports, of which a summary is herewith forwarded, propose to await further reports, expected shortly from India, and also further trial of the stronger springs, before submitting their final opinion. In the meantime they propose to make certain experiments in connexion with the weight and balance of a shorter arm, as suggested in page 16.

The other questions referred to this Committee, viz., a letter from Messrs. Eley, on cartridges, dated 9/5/70; a letter from Lord Elcho on Martini-Henry breech-action, dated 12/3/70; and a letter from Colonel Dixon, on Martini-Henry breech-actions, dated 18/4/70, will be considered and duly reported upon, it not having been thought desirable further to delay the completion of the report.

H. C. Fletcher, Capt. and Lieut.-Col. Scots Fus. Guards, President.
R. W. Haig, Captain, R.A.
Trevor Chapman, Captain, Inspector of Musketry.
J. E. F. Aylmer, Captain.
Elcho.
E. Ross.

Note.—Captain Majendie, a Member of the Committee, was absent (abroad) on duty, and therefore was not able to sign the Report.

FINAL REPORT

OF

SPECIAL COMMITTEE ON MARTINI-HENRY BREECH-LOADING RIFLES.

7669
2658

PRESIDENT:

Lieut.-Col. H. C. Fletcher, Scots Fusilier Guards.

MEMBERS:

Major R. W. Haig, R.A., F.R.S.
Captain A. T. L. Chapman, 34th Regt., District Inspector of Musketry.
Captain V. D. Majendie, R.A., Assistant Superintendent, Royal Laboratory.
Captain J. E. F. Aylmer, late 54th Regiment.
Lord Elcho, M.P.
C. Hutton Gregory, Esq., Past Pres. Inst. C.E.
E. Ross, Esq.
Lieut. B. de B. Tupper, R.A., Secretary.

War Office, 8th February 1871.

IN accordance with directions received from the Secretary of State for War, the Committee have the honour to forward a report in continuation of that dated 12th July 1870, on the experimental Martini-Henry arms. In this report will be shown the results of the trials of the Martini-Henry rifles of the pattern as first issued, together with those of the short-actioned arms suitable for the cartridge of the short-chamber form recommended by a Special Committee on 12th April 1870. During the course of these trials, the Committee have taken evidence on certain questions relating to the mechanical construction of the Martini breech action, and have also made experiments with reference to the suggestions and criticisms contained in the reports, as they have from time to time been received, from regiments, ships, and stations to which the arms were sent. 7669/2368 3/5/70.

For the sake of convenience and clearness the Committee have arranged the subject under the following heads, viz.:—

I. The Long-actioned Martini-Henry Rifle.
II. The Short-actioned Martini-Henry Rifle.
III. The evidence on the mechanical construction of the breech-action.
IV. Alterations and improvements suggested by the results of the trials and by the evidence.
V. Conclusion.

I.—THE LONG-ACTIONED MARTINI-HENRY RIFLE.

The Committee, in their report dated 12th July 1870, dealt with 50 reports from regiments and ships stationed in England, Ireland, and Canada; since then 55 more have been received, viz., one from the Mediterranean, eleven from India, and the remainder from Canada and Home Stations. A summary of these has been prepared, and the remarks of the Committee are appended on the points to which their attention has been called. Vide Appendix A., page 7.

The previous reports from regiments and ships are so strongly corroborated by those now under consideration that the Committee have little to add to their last report. In nearly every instance the great accuracy of shooting of this rifle as compared with the Snider, and the simplicity and facility of manipulation of the breech action, have given complete satisfaction. The miss-fires at first complained of are proved to have been caused by the weakness of the spiral springs originally issued, and have practically ceased since the substitution of stronger springs. This subject is further dealt with at page 5. Sixty-five of these arms, after having been severely tried by regiments in England, Ireland, and Canada,

were returned to Enfield, for the examination of Colonel Dixon, Superintendent Royal Small Arms Factories, whose report is attached, vide Appendix A., page 40; it is there shown that the wear and tear of these rifles under severe and exceptional trials have been very slight, and that no fault in construction has been developed.

II.—The Short-actioned Martini-Henry Rifle.

a. Arm.

The construction of the breech arrangement of the short-actioned arm is similar to that of the long, the action being somewhat shortened to suit the shorter cartridge. The only difference between the barrels lies in the form of chamber.

Twenty-two short-actioned arms with a sufficient supply of Boxer-Henry short-chamber cartridges were issued for trial to certain regiments and ships in October 1870. A summary of the reports already received is attached; vide Appendix B., page 41. These reports corroborate the opinion expressed by the Committee which recommended the trial, showing that in accuracy and general serviceability these rifles are equal to the long-actioned arms.

The reports of the short-actioned arms from the several regiments have received confirmation from the results of the shooting of the same arms at the last Wimbledon meeting, and from their trials in comparison with the Gatling and Montigny mitrailleurs at Shoeburyness in August 1870. At these latter trials 1,879 rounds were fired at distances varying from 300 to 1,200 yards without any defect either in arm or ammunition becoming apparent.

b. Cartridge.

The form of cartridge, which is shorter and without paper covering, was designed to meet the objection raised against the former pattern, viz., liability to bend, and inconvenience caused by the rucking up of the paper cover.

The short cartridge, which has no exterior covering of paper, is less liable to bend or break, and more convenient for loading than the long cartridge, while in accuracy of shooting it is somewhat superior.

Comparative experiments have been made (vide Appendix B., page 51) to ascertain the effects of water and moisture on the long and short cartridges, when it was found that while the longer cartridges with an exterior paper covering were slightly better adapted to resist immersion in water, the shooting qualities of both were about equally affected by insertion for a length of time in wet sawdust. The trials were more severe than those to which cartridges would probably be subjected on service, and the Committee are of opinion that the ammunition, when properly packed, is sufficiently waterproof for all practical purposes.

The Committee beg to record their conviction of the importance of having a cheaper and equally accurately shooting cartridge for target practice. On this subject, vide Appendix D., page 52.

c. Powder.

The powder first tried by the Committee in the Boxer-Henry cartridge, and of which they entirely approve, is known as "Curtis and Harvey, No. 6." Several other descriptions manufactured at the Government Factory, Waltham Abbey, have also been tried, but have not afforded the same uniform accuracy of shooting.

There appear to be difficulties, confined, it is believed, to the question of expense, in producing a powder at Waltham Abbey in all respects equal to "Curtis and Harvey, No. 6;" but the Committee, keeping in view the importance of maintaining the great accuracy of shooting of the Martini-Henry rifle, recommend that no powder should be used for its ammunition that does not give results at least equal to those obtained in the Committee's experiments, whether such powder be obtained from the Government Factory or from the trade.*

III.—Evidence on the Mechanical Construction of the Breech Action.

In consequence of doubts having been raised as to the soundness of the mechanical principles involved in the construction of the breech action, the Committee considered it desirable that independent scientific and practical evidence should be obtained on

* Messrs. Curtis and Harvey's powder was employed by Mr. Henry during the competition for accuracy of shooting, and as the results then attained were satisfactory, the Committee have, without making trial of the powder of other manufacturers, continued its use as a standard.

this point. They, therefore, with the sanction of the Secretary of State for War, invited the attendance before the Committee of the following gentlemen, viz.:—

F. J. Bramwell, Esq., C.E.
James Nasmyth, Esq., C.E.
Dr. Pole, C.E., F.R.S.
Edward Woods, Esq., C.E.
Colonel Dixon, Superintendent R.S.A. Factories.
Captain Beaumont, R.E., M.P.
Mr. Davidson, of the Royal Laboratory.
Mr. Perry, of the R.S.A. Factories.

Mr. Martini was also requested to attend, to give him an opportunity of answering any objections that might be urged against the mechanism of the breech action.

All these gentlemen were examined, with the exception of Mr. Bramwell,—who declined on the ground that he had already been consulted as a friend by a gunmaker, and that, therefore, the Committee would not have the benefit of his undivided services, —and Captain Beaumont, R.E., M.P., who gave the Committee reason to think that his evidence might not be received as thoroughly impartial; vide Appendix G., page 88. A programme containing the heads under which the Committee desired that the evidence should be arranged was sent to the several witnesses, and they were invited either to give written or verbal answers to the questions therein contained. The programme and evidence appear in Appendices F. and G., pages 57 and 58.

In the opinion of the Committee the evidence was conclusive as to the soundness of the mechanical principles of the breech action. On only one material point, viz., the general serviceability of the spiral main spring, did one of the witnesses differ from the others; but such was the preponderance of the evidence in its favour that when considered in conjunction with the success which has attended its use in the trials of the experimental arms, the Committee have no hesitation in expressing their opinion that not only is the spiral spring well suited for the purpose to which it is applied in the Martini action, but that it is superior for a military arm to the flat spring of the ordinary lock.

IV.—Alterations and Improvements suggested by the Results of the Trials and by the Evidence.

a. Weight, Length, and Balance of Rifle and Barrel.

The Committee in their former report recommended for the whole of the Infantry as well as for the Naval Service, an arm, 2⅜ inches shorter than the original Martini-Henry, of the same length as that used by the Rifle Brigade and Navy. The Committee were induced to make this recommendation for the following reasons, viz., the diminished weight and increased handiness of the rifle; its convenience in regard to length for military purposes, as evidenced by its use in the rifle regiments, whose tactics are similar to those of the infantry of the line; and the consequent doing away with the present long rifle drill, and the establishment throughout the services of an uniform system of manual and platoon exercises. They also considered that in respect to manufacture there would be some advantage in having one pattern rifle for the infantry of the army and of the reserve forces and for the navy. These opinions the Committee continue to hold, but having received no definite instructions in regard to the recommendation contained in their former report, they have made experiments to determine whether the balance of the longer arm could be improved and the weight diminished, two objections alleged against it in some of the reports. After communication with Colonel Dixon, Superintendent R.S.A. Factories, and Mr. Henry (of Edinburgh), they tried a barrel prepared at the R.S.A. Factory, Enfield, six ounces lighter than the original Martini-Henry, making the whole arm one ounce lighter than the long Snider rifle. The balance of this arm, which is far better than that of the original Martini-Henry, is well adapted for shooting purposes, and if the back sight be shifted half an inch nearer the muzzle, the rifle can be conveniently carried at the trail. In accuracy and flatness of trajectory, the shooting of the lighter barrel is equal to that of the heavier one, and the recoil is but very slightly increased. The strength was ascertained by trial to be sufficient to stand a severe side strain upon the sword bayonet.

The short arm recommended by the Committee is of the same length as that at present used by the Rifle Regiments and the Naval Service. In accuracy of shooting and flatness of trajectory it is equal to the longer barrel; its weight is about the same as that of the present short Snider rifle, viz., 8 lb. 12 oz., it balances well in hand, and it has been found that by shortening and reducing the comb of the stock the recoil from this rifle is less felt than the recoil of the original Martini-Henry pattern arm, which weighs 9 lb. 7 oz.

The objection as to the weight and balance which has been urged against the original Martini-Henry rifle has thus been met and remedied. The Committee are making experiments to determine whether the barrel of the short rifle may not be still further lightened.

b. Sword Bayonet.

The sword bayonet issued with the experimental arms has received the approval of the majority of the regiments by which it has been tried; some have, however, advocated an increase in the length of the saw. A modified pattern of this bayonet has been brought to the notice of the Committee by Lord Elcho, and has been tried by some regiments; the reports received are generally favourable; its advantages over the original saw-backed sword bayonet consists in its greater power and convenience as a cutting and chopping instrument for brushwood, &c., and the increased length of the saw.

Its dimensions and weight, without scabbard, as compared with those of the sword bayonet in use by the rifle regiments, are as follow :—

	Length.	Weight.
Rifle brigade sword bayonet - - -	2 ft. $4\frac{1}{8}$ in.,	1 lb. 12 oz.
Elcho pattern - - - - -	2 ft. $1\frac{3}{8}$ in.	1 lb. 8 oz.

The Committee have received a favourable opinion on the utility of this pattern of sword bayonet from Lieut.-General The Right Hon. Sir W. Mansfield, G.C.B., G.C.S.I., &c., vide letter to Lord Elcho, Appendix E., page 56.

Taking into consideration the favourable reports received of the original saw-backed sword bayonet and the increased advantages of the modified form, the Committee recommend the adoption into the service of the Elcho pattern saw-backed sword bayonet.

Some alterations in the form of scabbard and in the mode of fixing the bayonet to the rifle, to which the attention of the Superintendent R.S.A. Factories has been called, are under consideration, and will be reported upon when finally settled.

c. Minor alterations.

A few minor alterations having reference to the form of the main lever, the shape of stock, the position and form of back-sight, &c., have been approved by the Committee, and will be found enumerated in the Appendix C., page 52.

These alterations have been suggested by the Committee's own observations, by the reports of the trial of the rifles by the two services, or by the evidence of the witnesses examined.

It may still be desirable to make some slight alterations, not in any way involving changes of principle, before the arms and ammunition are produced in large quantities and issued for general service. Suggestions on such points will naturally emanate from the officers in charge of the manufacturing departments.

V.—Conclusion.

The various trials to which the Martini-Henry arm has been subjected since the issue of the report which first recommended its adoption, have now extended over a period of more than 18 months.

The Committee, after a careful review of the results of these trials, after consultation with independent scientific and practical witnesses on the mechanism of the breech action, and after full consideration of the whole question, are of opinion that the short-actioned Martini-Henry rifle is admirably adapted for a military arm, and they therefore unanimously recommend its adoption into the two services.

They also unanimously recommend the adoption for use with this arm of the short-chamber Boxer-Henry ammunition, and (for land service) of the Elcho bayonet.

H. C. Fletcher,
Lieut.-Colonel and President.
R. W. Haig, Major, R.A.
Trevor Chapman, Captain, 34th Regt.
V. D. Majendie, Captain, R.A.
J. E. F. Aylmer, Captain.
Elcho.
Charles Hutton Gregory.
Edward Ross.

APPENDIX A.

REPORTS received from REGIMENTS on the LONG-ACTION MARTINI-HENRY RIFLE.

Question 1.—What accidents, if any, have occurred?

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
51	Aldershot -	4th B.R.B.	1 June	None.	With reference to the accidents reported as having occurred with rifles Nos. 1 and 5 when on trial by the 77th Regiment, it should be noticed that all the rifles issued to this regiment were dismounted by the armourer sergeant before they were fired. In all probability, therefore, they had not been remounted correctly. This opinion is corroborated by Colonel Dixon, Superintendent of the Royal Small Arms Factories, after examination of the arms. The Committee would point to the fact of rifle No. 1 having fired 40 rounds without its block axis pin, as a proof that there can be little or no strain on this pin. One of the tumblers was broken by the use of unjustifiable force when the arm was bolted. Four pistons, one tumbler, and an axis pin have been reported broken, probably owing to faults in the metal. One axis pin was broken owing to force having been used to extract it when rusted in. An alteration will be made (*vide* Colonel Dixon's evidence, page 77) to prevent the liability of this pin becoming affected by rust. With reference to the report from H.M.S. Minotaur, that a rifle hanging fire went off unexpectedly, the attention of the Superintendent R.S.A. Factories will be called to this rifle when it shall have been returned to Enfield for inspection.
52	" -	1/4th	31 May	None.	
53	" -	42nd	13 July	None.	
54	Montreal -	1st B.R.B.	31 May	None.	
55	" -	"	30 June	None.	
56	" -	"	31 July	None.	
57	" -	"	19 Aug.	None.	
58	Quebec - -	69th	31 May	None.	
59	" -	"	30 June	None.	
60	" -	"	31 July	None.	
61	" -	"	31 Aug.	None.	
62	" -	"	30 Sept.	None.	
63	" -	"	4 Nov.	None.	
64	Hythe - -	S. of M.	14 June	None.	
65	" -	"	16 Aug.	The point of the striker of rifle No. 137 was broken. The tumbler of rifle No. 78 was broken. Head of tumbler pin of rifle No. 11 was broken off; in consequence the indicator is liable to fall off and be lost. Two swivel pins of the top band have been lost owing to their liability to unscrew.	
66	Portsmouth -	2/2nd	4 June	None.	
67	" -	"	27 Aug.	None.	
68	" -	R.M.L.I.	30 June	None.	
69	" -	82nd	3 "	None.	
70	" -	R.M.A.	1 July	None.	
71	" -	1/25th	2 Aug.	Rifle No. 9 went off once whilst the breech was being closed.	
72	" -	77th	1 "	Two. All the rifles had been dismounted by the armourer sergeant and regulated to the proper pull off. After remounting, rifle No. 5 went off twice without a finger near the trigger or the firer ready to fire. In the second instance when the breech was closed the lock was not at full cock, although indicated by both indicator and trigger. After several attempts the lock was put right, but on passing it over to the firer it went off in the air. It was dismounted by the armourer, who could not discover the cause, but no accident occurred afterwards.	
73	" -	"	18 "	The block axis pin of rifle No. 1 became loose and dropped out. 40 rounds were fired after this occurred without replacing the pin, and no inconvenience was experienced.	
74	Kinsale -	1/22nd	9 July	The striker of rifle No. 74 broke after firing 280 rounds of ball and 140 rounds of blank cartridge.	
75	" -	63rd	11 "	None.	
76	Youghal -	68th	1 "	None.	
77	Windsor -	2/S. Fus. Gds.	6 "	Question not replied to.	
78	" -	"	1 Aug.	The same.	

Question 1.—What accidents, if any, have occurred?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
79	Fermoy -	65th	25 July	None.	
80	„ -	„	13 Aug.	None.	
81	„ -	89th	25 July	None.	
82	Limerick -	„	11 Aug.	None.	
83	Buttevant -	72nd	25 July	None.	
84	„ -	„	8 Aug.	None.	
85	Palermo -	H.M.S. Lord Warden.	6 July	None.	
86	Channel -	H.M.S. Minotaur.	19 „	None.	
87	North America	H.M.S. Royal Alfred.	6 Sept.	None.	
88	Portsmouth -	H.M.S. Excellent.	7 Dec.	The bent of the tumbler of rifle No. 54 was broken by using force to open the block when the arm was bolted; there appeared to be a flaw in the metal: a new tumbler was made by the ship's armourer. The cover of the trap of the same rifle was broken off. The point of the striker has been broken in each of the three rifles; this was repaired by the ship's armourer. Suggests that the points of the striker be strengthened and fitted into the body, and that spare points should be supplied, as this would save time and could be more readily repaired when broken.	
89	Plymouth -	H.M.S. Cambridge.	13 Oct.	In one case the breech axis pin became rusty from fouling, and was broken when being removed. In another case a burr was found in the slot where the tumbler works,—it was removed.	
90	„ -	„	23 Dec.	None.	
91	Morar -	1/11th	8 Oct.	In volley firing, a rear-rank man slipped and blew off the upper band and part of the stock of rifle No. 75 in front of him.	
92	Dum Dum -	96th	11 Aug.	Owing to the fault of one of the men, rifle No. 28 went off on closing the action.	
93	Umballa -	106th	27 Sept.	None.	
94	Simla -	Chief I. of M.	16 Oct.	None.	
95	Poona -	1/2nd	13 „	None.	
96	Kurrachee -	66th	26 „	None.	
97	Dugshaie -	1/3rd	11 „	The tumbler of rifle No. 3 broke at practice.	
98	Rawul Pindee -	36th	10 Nov.	One striker was broken; it was apparently of bad metal.	
99	Lucknow -	62nd	17 Oct.	The block axis pin of rifle No. 30 was broken.	

Question 2.—What difficulties, if any, have been found in loading?

51	Aldershot -	4th B.R.B.	1 June	None.	The answers are generally similar to those which have already been reported upon by the Committee. Their previous remarks will consequently apply, and it may be observed that the principal objections urged have been removed by the substitution of the short-chambered cartridge, which has no external covering of paper.
52	„ -	1/4th	31 May	None.	
53	„ -	42nd	13 July	None.	
54	Montreal -	1st B.R.B.	31 May	None.	
55	„ -	„	30 June	None.	
56	„ -	„	31 July	None.	
57	„ -	„	19 Aug.	None.	
58	Quebec -	69th	31 May	None. Rifle No. 100 works better than it did.	
59	„ -	„	30 June	None. Rifle No. 100 has improved.	
60	„ -	„	31 July	The same.	
61	„ -	„	31 Aug.	Rifle No. 100 is all right now.	
62	„ -	„	30 Sept.	The same.	

Question 2.—What difficulties, if any, have been found in loading?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
63	Quebec -	69th	4 Nov.	The same.	
64	Hythe -	S. of M.	14 June	None.	
65	"	"	16 Aug.	None.	
66	Portsmouth -	2/2nd	4 June	None.	
67	" -	"	27 Aug.	Occasionally some difficulty was experienced in forcing the cartridge into the chamber.	
68	" -	R.M.L.I.	30 June	None.	
69	" -	82nd	3 "	None, except when the rifles had become foul or very dirty.	
70	" -	R.M. Artillery	1 July	None.	
71	" -	1/25th	2 Aug.	There was slight difficulty in loading when the cartridge was bent or the paper torn.	
72	" -	77th	1 "	One cartridge being bent at the base entered as far as the inner base-cup and then stuck. Several slightly stuck at the outer base-cup, requiring an extra pressure of the thumb to force them home. With blank cartridge great delay in firing was caused by the squareness of the front part of the cartridge, the corner of which stuck at the mouth of the chamber.	
73	" -	"	18 "	In one cartridge the brown paper was so thick that on entering the chamber it peeled back, thereby causing difficulty in loading with blank cartridge. See Remarks to Question No. 3.	
74	Kinsale -	1/22nd	9 July	None.	
75	"	63rd	11 "	None.	
76	Youghal -	68th	1 "	None, unless the cartridge is bent.	
77	Windsor -	2/S. Fus. Gds.	6 "	None.	
78	"	"	1 Aug.	None.	
79	Fermoy -	65th	25 July	None.	
80	"	"	13 Aug.	None.	
81	"	89th	25 July	None.	
82	Limerick -	"	11 Aug.	None.	
83	Buttevant -	72nd	25 July	None.	
84	"	"	8 Aug.	None.	
85	Palermo -	H.M.S. Lord Warden.	6 July	None.	
86	Channel -	H.M.S. Minotaur.	19 "	Two cartridges would not enter the breech of either of the three rifles.	
87	N. America -	H.M.S. Royal Alfred.	6 Sept.	None.	
88	Portsmouth -	H.M.S. Excellent.	7 Dec.	None, except with the bent cases, when the extractor had to be used more than once.	
89	Plymouth -	H.M.S. Cambridge.	13 Oct.	Question not replied to.	
90	" -	"	23 Dec.	There were slight difficulties in loading when the cartridges were bent.	
91	Morar -	1/11th	8 Oct.	A few cartridges were found too large at the base for some of the rifles.	
92	Dum Dum -	96th	11 Aug.	None.	
93	Umballa -	106th	27 Sept.	None. If a cartridge is bent it will not enter the breech.	
94	Simla -	Chief I. of M.	16 Oct.	About 20 ball cartridges became bent and would not enter the breech.	
95	Poona -	1/2nd	13 "	None.	
96	Kurrachee -	66th	26 "	Slight difficulties when the cartridges were bent from being shaken in the ball bag.	
97	Dugshaie -	1/3rd	11 "	None.	
98	Rawul Pindee	36th	10 Nov.	There were difficulties when the cartridge became bent or when the base-cups were too large.	
99	Lucknow -	62nd	17 Oct.	There were slight difficulties when the cartridges were bent.	

Question 3.—What difficulties, if any, have been found in extracting cartridge cases?

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
51	Aldershot -	4th B. R. B.	1 June	None.	The reports show that in a few cases there has been a want of uniformity in the power of extraction. One report attributes this to rust. In some instances it seems to have arisen from defects in the cartridges, but in general from the inexperience of the soldier in the proper use of the lever, as no fault in extraction could be observed in any of the rifles which have been returned to Enfield. Referring to the breaking of the base discs with the blank ammunition. The Committee are informed by the Superintendent, Royal Laboratory, that in future the ordinary service blank ammunition as issued for the Snider rifles can be used in the short chambered Martini-Henry, and that no instances have occurred of the breaking of the base discs of this ammunition.
52	" -	1/4th	31 May	None, but the lever must be depressed sharply.	
53	" -	42nd	13 July	None, except in rifle No. 68.	
54	Montreal -	1st B. R. B.	31 May	None.	
55	" -	"	30 June	None.	
56	" -	"	31 July	None.	
57	" -	"	19 Aug.	None.	
58	Quebec -	69th	31 May	None. Rifle No. 100 has improved.	
59	" -	"	30 June	Rifle No. 100 very bad.	
60	" -	"	31 July	The same.	
61	" -	"	31 Aug.	The same.	
62	" -	"	30 Sept.	The same.	
63	" -	"	4 Nov.	The same.	
64	Hythe -	S. of M.	14 June	None.	
65	" -	"	16 Aug.	A few cases of the base discs becoming detached, and consequent necessity for using the rod.	
66	Portsmouth -	2/2nd	4 June	None.	
67	" -	"	27 Aug.	In rifle No. 8 an extra jerk was required in many instances to extract the cartridge case.	
68	" -	R. M. L. I.	30 June	None.	
69	" -	82nd	3 "	None, but the lever must be depressed sharply.	
70	" -	R.M. Artillery	1 July	None.	
71	" -	1/25th	2 Aug.	Unless the lever be jerked sharply it fails to throw out the cartridge case.	
72	" -	77th	1 "	The lever must be depressed sharply. In some instances the base disc and caps of the blank cartridge broke off on extraction.	
73	" -	"	18 "	The same.	
74	Kinsale -	1/22nd	9 July	None.	
75	" -	63rd	11 "	In four cases the base of the blank cartridge was torn off on extraction.	
76	Youghal -	68th	1 "	In one case the paper of a blank cartridge remained in the barrel, but was easily extracted.	
77	Windsor -	2/S. Fus. Gds.	6 "	None.	
78	" -	"	1 Aug.	None.	
79	Fermoy -	65th	25 July	A part of one cartridge remained in the barrel.	
80	" -	"	13 Aug.	When the rifle is foul an extra jerk is required to extract the cartridge case.	
81	" -	89th	25 July	None.	
82	Limerick -	"	11 Aug.	None.	
83	Buttevant -	72nd	25 July	None.	
84	" -	"	8 Aug.	None.	
85	Palermo -	H.M.S. Lord Warden.	6 July	None.	
86	Channel -	H.M.S. Minotaur.	19 "	None.	
87	North America	H.M.S. Royal Alfred.	6 Sept.	None.	
88	Portsmouth -	H.M.S. Excellent.	7 Dec.	Twelve slight jams from the cartridges being bent, and in one case from the paper being rucked up; they were all fired except two kept for sample.	
89	Plymouth -	H.M.S. Cambridge.	13 Oct.	Question not replied to.	
90	" -	"	23 Dec.	None, provided sufficient force is used.	
91	Morar -	1/11th	8 Oct.	None. The extractor of all the rifles have worked freely and well.	
92	Dum Dum -	96th	11 Aug.	None.	
93	Umballa -	106th	27 Sept.	None.	
94	Simla -	Chief I. of M.	16 Oct.	None.	
95	Poona -	1/2nd	13 "	None.	
96	Kurrachee -	66th	26 "	Slight difficulties in rifle No. 47, which were remedied by the armourer-sergeant.	

Question 3.—What difficulties, if any, have been found in extracting cartridge cases ?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
97	Dugshaie -	1/3rd	11 Oct.	None.	
98	Rawul Pindee -	36th	10 Nov.	None, when the men were accustomed to the arm.	
99	Lucknow -	62nd	17 Oct.	No difficulty, except when the breech became rusty.	

Question 4.—Has the lever in any case been broken, or so bent as to impede the action ?

51	Aldershot -	4th B. R. B.	1 June	No.	
52	„ - -	1/4th	31 May	No.	None required.
53	„ - -	42nd	13 July	No.	
54	Montreal -	1st B. R. B.	31 May	No.	
55	„ - -	„	30 June	No.	
56	„ - -	„	31 July	No.	
57	„ - -	„	19 Aug.	No.	
58	Quebec -	69th	31 May	No.	
59	„ - -	„	30 June	No.	
60	„ - -	„	31 July	No.	
61	„ - -	„	31 Aug.	No.	
62	„ - -	„	30 Sept.	No.	
63	„ - -	„	4 Nov.	No.	
64	Hythe - -	S. of M.	14 June	No.	
65	„ - -	„	16 Aug.	No.	
66	Portsmouth -	2/2nd	4 June	No.	
67	„ - -	„	27 Aug.	No.	
68	„ - -	R.M.L.I.	30 June	No.	
69	„ - -	82nd	3 „	No.	
70	„ - -	R.M. Artillery	1 July	No.	
71	„ - -	1/25th	2 Aug.	No.	
72	„ - -	77th	1 „	No.	
73	„ - -	„	18 „	No.	
74	Kinsale -	1/22nd	9 July	No.	
75	„ - -	63rd	11 „	No.	
76	Youghal -	68th	1 „	No.	
77	Windsor -	2/S. Fus. Gds.	6 „	No.	
78	„ - -	„	1 Aug.	No.	
79	Fermoy -	65th	25 July	No.	
80	„ - -	„	13 Aug.	No.	
81	„ - -	89th	25 July	No.	
82	Limerick -	„	11 Aug.	No.	
83	Buttevant -	72nd	25 July	No.	
84	„ - -	„	8 Aug.	No.	
85	Palermo -	H.M.S. Lord Warden.	6 July	No.	
86	Channel -	H.M.S. Minotaur.	19 „	No.	
87	North America	H.M.S. Royal Alfred.	6 Sept.	No.	
88	Portsmouth -	H.M.S. Excellent	7 Dec.	No.	
89	Plymouth -	H.M.S. Cambridge.	13 Oct.	Question not replied to.	
90	„	„	23 Dec.	No.	
91	Morar - -	1/11th	8 Oct.	No.	
92	Dum Dum -	96th	11 Aug.	No.	
93	Umballa -	106th	27 Sept.	No.	
94	Simla - -	Chief I. of M.	16 Oct.	No.	
95	Poona - -	1/2nd	13 „	No.	
96	Kurrachee -	66th	26 „	No.	
97	Dugshaie -	1/3rd	11 „	No.	
98	Rawul Pindee -	36th	10 Nov.	No.	
99	Lucknow -	62nd	17 Oct.	No.	

Question 5.—Has rust been found to accumulate about the breech so as to affect its working ?

51	Aldershot -	4th B.R.B.	1 June	No.	The remarks of the Committee in their former Report apply to these answers. In a few instances the action has been impeded by rust, but on the other hand the arms have on many occasions been exposed to very severe trials from wet and dirt, without the working of the breech action being in any way impeded, a result in accordance with that arrived at after
52	„ -	1/4th	31 May	No.	
53	„ -	42nd	13 July	No.	
54	Montreal -	1st B.R.B.	31 May	Yes. On the 4th, 5th, and 6th of this month there was heavy rain, and the rifles got very wet crossing in the boat to the island. The breech actions became rusted and the pull off so great that it was almost impossible to move the trigger, and one rifle became useless for the day.	

Question 5.—Has rust been found to accumulate about the breech so as to affect its working ?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
55	Montreal -	1st B.R.B.	30 June	No.	severe tests by the Committee which recommended this arm. (Vide Report of the Special Committee on Breech-loading Rifles, p. vii to ix.) Any action having a falling block would be equally exposed to injury by rust, whilst the main spring of the Martini action has by its position exceptional protection.
56	„ -	„	31 July	No.	
57	„ -	„	19 Aug.	No.	
58	Quebec -	69th	31 May	No.	
59	„ -	„	30 June	No.	
60	„ -	„	31 July	No.	
61	„ -	„	31 Aug.	No. The rifles have been exposed to all sorts of weather.	
62	„ -	„	30 Sept.	No.	
63	„ -	„	4 Nov.	No.	
64	Hythe -	S. of M.	14 June	No.	
65	„ -	„	16 Aug.	No.	
66	Portsmouth -	2/2nd	4 June	No.	
67	„ -	„	27 Aug.	No.	
68	„ -	R.M.L.I.	30 June	The breech of rifle No. 6 became very difficult to open; on examination, the whole of the parts were found clogged with oil, dirt, and rust, apparently of long standing. Remarks that cleaning by an armourer occasionally will be necessary, signs of wear soon appear when the parts are rusted or dry from want of oil.	
69	„ -	82nd	3 June	No.	
70	„ -	R.M. Artillery	1 July	No.	
71	„ -	1/25th	2 Aug.	During bad weather rust has accumulated quickly, but not so as to affect its working.	
72	„ -	77th	1 „	No, except when the rifles were allowed to become rusty from the application of water.	
73	„ -	„	18 „	Rust has accumulated but not so as to affect the working.	
74	Kinsale -	1/22nd	9 July	No.	
75	„ -	63rd	11 „	After firing in heavy rain and leaving the rifles uncleaned, rifle No. 56 became so rusted as to materially affect its proper working.	
76	Youghal -	68th	1 „	No.	
77	Windsor -	2/S. Fus. Gds.	6 „	No. Rust and fibre of cartridge paper in small quantities has been found in the breech action, but not so as to affect its working.	
78	„ -	„	1 Aug.	No.	
79	Fermoy -	65th	25 July	No.	
80	„ -	„	13 Aug.	A little rust has accumulated, but not so as to affect its working.	
81	„ -	89th	25 July	No.	
82	Limerick -	„	11 Aug.	No.	
83	Buttevant -	72nd	25 July	No.	
84	„ -	„	8 Aug.	Rust is liable to accumulate between the block and the sides of the lock, but not so as to affect its working.	
85	Palermo -	H.M.S. Lord Warden.	6 July	No.	
86	Channel -	H.M.S. Minotaur.	19 „	No.	
87	North America	H.M.S. Royal Alfred.	6 Sept.	No.	
88	Portsmouth -	H.M.S. Excellent.	7 Dec.	Yes. On one occasion rifle No. 54 was used for firing throughout a wet day and was put away damp. The rifle was examined 2½ days afterwards, most of the parts of the breech, especially those near the trigger plate, were set with rust, showing that the breech action requires dismounting and cleaning after exposure to wet, in order to insure its efficient action.	
89	Plymouth -	H.M.S. Cambridge.	13 Oct.	Question not replied to.	

Question 5.—Has rust been found to accumulate about the breech so as to affect its working ?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
90	Plymouth -	H.M.S. Cambridge.	23 Dec.	Not so as to affect its working, but rust has accumulated about the breech, axis pin, and extractor pin, causing much difficulty in removing the breech for cleaning.	
91	Morar -	1/11th	8 Oct.	Rust has collected during the rainy season, and the action has become stiff; on opening and closing the breech a few times sharply, its usual freedom of action invariably returned.	
92	Dum Dum -	96th	11 Aug.	Rust has accumulated, but not so as to affect its working.	
93	Umballa -	106th	27 Sept.	No. On several occasions during heavy rains the breech mechanism became saturated; water was also poured down the barrel and into the breech-block, the coil spring being compressed to allow the water to enter; the rifles were then left for four days, on examination, the inner sides of the breech were covered with rust, but the coil springs and levers were quite free from it owing to the oil upon them, and did not cause any difference in the number of miss-fires.	
94	Simla - -	Chief I. of M.	16 Oct.	At the commencement of the trial rust affected the action of the piston or striker. The rifle had been exposed to a severe wetting and was left untouched for 48 hours. Miss-fires at the rate of 80 per cent. occurred. On taking out the breech-block it was seen that owing to the entire absence of oil, much rust was present on the various parts of the action. They were cleaned and oiled, since which time and although the arm has since been exposed to very heavy rain, and has been several times placed under a spout (discharging gallons of water per second) without the breech action having been dried, or even the block taken out, the action has worked perfectly.	
95	Poona - -	1/2nd	13 „	No.	
96	Kurrachee -	66th	26 „	Not so as to affect its working.	
97	Dugshaie -	1/3rd	11 „	No.	
98	Rawul Pindee -	36th	10 Nov.	No. The rifles were exposed for 42 hours to very heavy rain, dust storms, and sun. 20 rounds of blank were then fired from each arm without a miss-fire.	
99	Lucknow -	62nd	17 Oct.	Yes. A slight shower of rain caused rust to accumulate in the breech, thereby affecting the action of the extractor. In two instances it was found that the breech block fell too low on the breech being opened, this caused the extractor to protrude so as to prevent the cartridge from remaining pressed home, and the trigger would not act. In other instances the cartridge case was only partially extracted.	

Question 6.—Has the coil spring been found to become weak and inefficient?

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
51	Aldershot -	4th B. R. B.	1 June	There have been 44 miss-fires, with one exception the cartridges were all fired the second time. One cartridge after repeated failures in rifle No. 187 was fired the first time in rifle No. 162.	The evidence of these answers corroborates the opinion expressed by the Committee in their previous Report to the effect that, by the substitution of stronger springs, miss-fires have practically ceased.
52	" -	1/4th	31 May	No.	
53	" -	42nd	13 July	Not the present ones.	
54	Montreal -	1st B. R. B.	31 May	No. Only one miss-fire has occurred since the new springs have been put in.	
55	" -	"	30 June	No.	
56	" -	"	31 July	No.	
57	" -	"	19 Aug.	No.	
58	Quebec -	69th	31 May	Only four miss-fires have occurred since the new springs have been put in.	
59	" -	"	30 June	Not the present ones.	
60	" -	"	31 July	The same.	
61	" -	"	31 Aug.	The same.	
62	" -	"	30 Sept.	The same.	
63	" -	"	4 Nov.	The same.	
64	Hythe -	S. of M.	4 June	No.	
65	" -	"	16 Aug.	There have been no miss-fires since the stronger springs have been put in.	
66	Portsmouth -	2/2nd	4 June	No. There has not been one miss-fire during the month.	
67	" -	"	27 Aug.	No.	
68	" -	R. M. L. I.	30 June	Since the new coil springs have been put in no miss-fires have occurred, and there are no signs of the springs getting weaker.	
69	" -	82nd	3 June	No.	
70	" -	R. M. Artillery	1 July	No.	
71	" -	1/25th	2 Aug.	No.	
72	" -	77th	1 "	No.	
73	" -	"	18 "	No.	
74	Kinsale -	1/22nd	9 July	No.	
75	" -	63rd	11 "	No.	
76	Youghal -	68th	1 "	No.	
77	Windsor -	2/ S. Fus. Gds.	6 "	No.	
78	" -	"	1 Aug.	No.	
79	Fermoy -	65th	25 July	No.	
80	" -	"	13 Aug.	No.	
81	" -	89th	25 July	No.	
82	Limerick -	"	11 Aug.	No.	
83	Buttevant -	72nd	25 July	No.	
84	" -	"	8 Aug.	No.	
85	Palermo -	H.M.S. Lord Warden.	6 July	No.	
86	Channel -	H.M.S. Minotaur.	19 "	With rifle No. 130, 14 miss-fires occurred in the first 115 rounds, attributed to the weakness of spring, which was then shifted. The first 5 rounds with the new springs were all miss-fires, but no miss-fires have occurred since.	
87	North America	H.M.S. Royal Alfred.	6 Sept.	No.	
88	Portsmouth -	H.M.S. Excellent.	7 Dec.	No.	
89	Plymouth -	H.M.S. Cambridge.	13 Oct.	Question not replied to.	
90	" -	"	23 Dec.	Not since supplied with the stronger springs.	
91	Morar -	1/11th	8 Oct.	The coil springs of rifles No. 73 and 176 were originally weak and consequently miss-fires occurred.	
92	Dum Dum -	96th	11 Aug.	The coil springs are apparently weak, as miss-fires have occurred.	
93	Umballa -	106th	27 Sept.	No. The coil spring of rifles 140, 142, and 146 were originally weak.	
94	Simla -	Chief I. of M.	16 Oct.	No.	
95	Poona -	1/2nd	13 "	No.	
96	Kurrachee -	66th	26 "	No.	

Question 6.—Has the coil spring been found to become weak and inefficient?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
97	Dugshaie -	1/3rd	11 Oct.	No.	
98	Rawul Pindee -	36th	10 Nov.	Yes, particularly towards the close of the experiments.	
99	Lucknow -	62nd	17 Oct.	Yes. The coil spring is deemed weak, as there were frequent miss-fires.	

Question 7.—Is the action of the extractor, in throwing out the empty cartridge case, considered too sudden?

51	Aldershot -	4th B. R. B.	1 June	No.	
52	" -	1/4th	31 May	No.	
53	" -	42nd	13 July	No. It is very advantageous -	None required.
54	Montreal -	1st B. R. B.	31 May	No.	
55	" -	"	30 June	No.	
56	" -	"	31 July	No.	
57	" -	"	19 Aug.	No.	
58	Quebec -	69th	31 May	No.	
59	" -	"	30 June	No.	
60	" -	"	31 July	No.	
61	" -	"	31 Aug.	No.	
62	" -	"	30 Sept.	No.	
63	" -	"	4 Nov.	No.	
64	Hythe -	S. of M.	14 June	No.	
65	" -	"	16 Aug.	No.	
66	Portsmouth -	2/2nd	4 June	No.	
67	" -	"	27 Aug.	No.	
68	" -	R. M. L. I.	30 June	No.	
69	" -	82nd	3 "	No.	
70	" -	R. M. Artillery	1 July	No.	
71	" -	1/25th	2 Aug.	No.	
72	" -	77th	1 "	No.	
73	" -	"	18 "	No. It requires the sudden jerk to insure the complete extraction of the cartridge cases.	
74	Kinsale -	1/22nd	9 July	No.	
75	" -	63rd	11 "	No.	
76	Youghal -	68th	1 "	No.	
77	Windsor -	2/ S. Fus. Gds.	6 "	No.	
78	" -	"	1 Aug.	No.	
79	Fermoy -	65th	25 July	No.	
80	" -	"	13 Aug.	No.	
81	" -	89th	25 July	No.	
82	Limerick -	"	11 Aug.	No.	
83	Buttevant -	72nd	25 July	No.	
84	" -	"	8 Aug.	No.	
85	Palermo -	H.M.S. Lord Warden.	6 July	No.	
86	Channel -	H.M.S. Minotaur.	19 "	No.	
87	North America	H.M.S. Royal Alfred.	6 Sept.	No.	
88	Portsmouth -	H.M.S. Excellent.	7 Dec.	No.	
89	Plymouth -	H.M.S. Cambridge.	13 Oct.	Question not replied to.	
90	" -	"	23 Dec.	No.	
91	Morar -	1/11th	8 Oct.	No. Its suddenness in ejecting the cartridge cases is considered an advantage in quick firing.	
92	Dum Dum -	96th	11 Aug.	No.	
93	Umballa -	106th	27 Sept.	No.	
94	Simla -	Chief I. of M.	16 Oct.	No.	
95	Poona -	1/2nd	13 Oct.	No.	
96	Kurrachee -	66th	26 "	No.	
97	Dugshaie -	1/3rd	11 "	No.	
98	Rawul Pindee -	36th	10 Nov.	No.	
99	Lucknow -	62nd	17 Oct.	No.	

Question 8.—The stock being in two parts, has it remained firm and strong?

51	Aldershot -	4th B. R. B.	1 June	Yes.	The Committee would point out that the evidence on this point is satisfactory. The results of experiments made to test the relative strength of
52	" -	1/4th	31 May	Yes.	
53	" -	42nd	13 July	Yes.	
54	Montreal -	1st B. R. B.	31 May	Yes.	
55	" -	"	30 June	Yes.	

Question 8.—The stock being in two parts, has it remained firm and strong?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
56	Montreal -	B. R. B.	31 July	Yes.	whole and divided stocks, also show that divided stocks are certainly equally as strong as whole stocks.
57	„ -	„	19 Aug.	Yes.	
58	Quebec -	69th	31 May	No. In rifle No. 72.	
59	„ -	„	30 June	The same.	
60	„ -	„	31 July	The same.	
61	„ -	„	31 Aug.	Rifles No. 34 and 72 have both been screwed up by the armourer-sergeant.	
62	„ -	„	30 Sept.	The same.	
63	„ -	„	4 Nov.	The same.	
64	Hythe -	S. of M.	14 June	Yes.	
65	„ -	„	16 Aug.	Vide answer to Question 9.	
66	Portsmouth -	2/2nd	4 June	Yes.	
67	„ -	„	27 Aug.	Yes.	
68	„ -	R. M. L. I.	30 June	Yes.	
69	„ -	82nd	3 „	Yes.	
70	„ -	R.M. Artillery.	1 July	Yes.	
71	„ -	1/25th	2 Aug.	Yes.	
72	„ -	77th	1 „	Yes.	
73	„ -	„	18 „	Yes.	
74	Kinsale -	1/22nd	9 July	Yes.	
75	„ -	63rd	11 „	Yes.	
76	Youghal -	68th	1 „	Yes.	
77	Windsor -	2/S. Fus. Gds.	6 „	Yes. Vide answer to Question No. 9.	
78	„ -	„	1 Aug.	Yes.	
79	Fermoy -	65th	25 July	Yes.	
80	„ -	„	13 Aug.	Yes.	
81	„ -	89th	25 July	Yes.	
82	Limerick -	„	11 Aug.	Yes.	
83	Buttevant -	72nd	25 July	Yes.	
84	„ -	„	8 Aug.	Yes.	
85	Palermo -	H.M.S. Lord Warden.	6 July	Yes.	
86	Channel -	H.M.S. Minotaur.	19 „	Yes.	
87	North America	H.M.S. Royal Alfred.	6 Sept.	Yes.	
88	Portsmouth -	H.M.S. Excellent.	7 Dec.	Yes.	
89	Plymouth -	H.M.S. Cambridge.	13 Oct.	Question not replied to.	
90	„ -	„	23 Dec.	Vide answer to Question 9.	
91	Morar -	1/11th	8 Oct.	Yes.	
92	Dum Dum -	96th	11 Aug.	Yes.	
93	Umballa -	106th	27 Sept.	Yes.	
94	Simla -	Chief I. of M.	16 Oct.	Yes.	
95	Poona -	1/2nd	13 „	Yes, but it has only been exposed to monsoon weather, and not to dry heat.	
96	Kurrachee -	66th	26 „	Yes.	
97	Dugshaie -	1/3rd	11 „	Yes.	
98	Rawul Pindee -	36th	10 Nov.	No. The screw bolt has become loose on several occasions, and when exposed to heavy rain the fore stock expanded, but closed again in a few days.	
99	Lucknow -	62nd	17 Oct.	Yes.	

Question 9.—Has the butt end been found to shrink or become loose from the effect of hot dry temperature?

51	Aldershot -	4th B. R. B.	1 June	No.	The Committee would point out that with the exception of a few rifles, all the stocks have stood the wear and tear satisfactorily. Two of these rifles have been examined by the Superintendent R. S. A. Factories at Enfield, the others have not yet been returned to England. Colonel Dixon reports that the stocks of these two rifles were originally badly fitted. A few reports state that the stock has shrunk away from the shoe. This inconvenience can easily be remedied by the armourer-sergeant.
52	„ -	1/4th	31 May	No.	
53	„ -	42nd	13 July	No.	
54	Montreal -	1st B. R. B.	31 May	No.	
55	„ -	„	30 June	No.	
56	„ -	„	31 July	No.	
57	„ -	„	19 Aug.	No.	
58	Quebec -	69th	31 May	Rifle No. 72 very loose.	
59	„ -	„	30 June	The same.	
60	„ -	„	31 July	The same.	
61	„ -	„	31 Aug.	The butt end does not shrink. Rifles No. 34 and 72 have both been screwed up.	
62	„ -	„	30 Sept.	No.	
63	„ -	„	4 Nov.	No.	
64	Hythe -	S. of M.	14 June	The butt end of one rifle has shrunk a little, but does not appear to be loose.	

Question 9.—Has the butt end been found to shrink or become loose from the effect of hot dry temperature?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
65	Hythe -	S. of M.	16 Aug.	The stock butt of Rifle No. 78 has become loose, probably from the shrinking of the wood enclosed within the body, and the bolt not fitting the hollow in the butt accurately.	
66	Portsmouth -	2/2nd	4 June	No.	
67	" -	"	27 Aug.	No.	
68	" -	R. M. L. I.	30 June	No.	
69	" -	82nd	3 "	No.	
70	" -	R. M. Artillery.	1 July	No.	
71	" -	1/25th	2 Aug.	No.	
72	" -	77th	1 "	No.	
73	" -	"	18 "	No.	
74	Kinsale -	1/22nd	9 July	No.	
75	" -	63rd	11 "	No.	
76	Youghal -	68th	1 "	No.	
77	Windsor -	2/S. Fus. Gds.	6 "	The butt end of rifle No. 4 was found loose.	
78	" -	"	1 Aug.	No.	
79	Fermoy -	65th	25 July	No.	
80	" -	"	13 Aug.	No.	
81	" -	89th	25 July	No.	
82	Limerick -	"	11 Aug.	No.	
83	Buttevant -	72nd	25 July	No.	
84	" -	"	8 Aug.	No.	
85	Palermo -	H.M.S. Lord Warden.	6 July	No.	
86	Channel -	H.M.S. Minotaur.	19 July	No.	
87	North America	H.M.S. Royal Alfred.	6 Sept.	No.	
88	Portsmouth -	H.M.S. Excellent.	7 Dec.	No hot weather.	
89	Plymouth -	H.M.S. Cambridge.	13 Oct.	The stock bolt of rifle No. 42 became loose, and the head chipped a little.	
90	" -	"	23 Dec.	The stock butt of rifle No. 42 became loose from firing.	
91	Morar -	1/11th	8 Oct.	No. The arms were not tested until the hot winds had ceased.	
92	Dum Dum -	96th	11 Aug.	No.	
93	Umballa -	106th	27 Sept.	No.	
94	Simla -	Chief I. of M.	16 Oct.	No.	
95	Poona -	1/2nd	13 "	No hot dry weather.	
96	Kurrachee -	66th	26 "	No.	
97	Dugshaie -	1/3rd	11 Oct.	No.	
98	Rawul Pindee -	36th	10 Nov.	Yes. The stock bolt screws of several rifles have become loose from the heat of the climate which caused the wood to shrink, and from the continuous ball practice. The screws had to be tightened.	
99	Lucknow -	62nd	17 Oct.	No.	

Question 10.—Is any inconvenience experienced from recoil?

51	Aldershot -	4th B. R. B.	1 June	Yes, when the arm is very dirty, and after firing about 50 rounds.	The great majority of the answers state that the recoil is not excessive. This opinion is in accordance with the reports previously received.
52	" -	1/4th	31 May	No; but more than that of the Snider.	
53	" -	42nd	13 July	No; but greater than that of the Snider.	
54	Montreal -	1st B. R. B.	31 May	No.	
55	" -	"	30 June	No.	
56	" -	"	31 July	No.	
57	" -	"	19 Aug.	No.	
58	Quebec -	69th	31 May	No.	
59	" -	"	30 June	No.	
60	" -	"	31 July	No.	
61	" -	"	31 Aug.	No.	
62	" -	"	30 Sept.	No.	
63	" -	"	4 Nov.	No.	
64	Hythe - -	S. of M.	14 June	Not after the men became accustomed to the rifle.	
65	" -	"	16 Aug.	No.	

Question 10.—Is any inconvenience experienced from recoil ?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
66	Portsmouth -	2/2nd	4 June	No.	
67	„ -	„	27 Aug.	No.	
68	„ -	R.M.L.I.	30 June	No; but more than that of the Snider, but scarcely appreciable.	
69	„ -	82nd	3 „	It is greater than that of the Snider. The men complain of it.	
70	„ -	R.M. Artillery	1 July	No.	
71	„ -	1/25th	2 Aug.	Yes, especially to those men who are unable to get the butt of the rifle well into the hollow of their shoulders.	
72	„ -	77th	1 „	After firing 50 rounds the recoil was very considerable.	
73	„ -	„	18 „	Yes, after the 30th round, especially with quick firing. Attributes it to extreme quickness of rifling twist, increase of charge and the unconsumed powder of previous charge. Considers it greater than that of the Snider.	
74	Kinsale -	1/22nd	9 July	No.	
75	„ -	63rd	11 „	Yes; more especially when firing with the arms uncleaned.	
76	Youghal -	68th	1 „	No.	
77	Windsor -	2/S. Fus. Gds.	6 „	In the standing position the recoil is excessive. Attributes it to the stock being too straight.	
78	„ -	„	1 Aug.	Yes, the recoil is universally considered excessive.	
79	Fermoy -	65th	25 July	Yes, the men complained of it. When the thumb is placed (as per musketry directions,) across the head of the stock, the men received a blow on the nose which has the effect of making them nervous, and putting them off their firing.	
80	„ -	„	13 Aug.	The same, but the men do not feel the recoil now.	
81	„ -	89th	25 July	No.	
82	Limerick -	„	11 Aug.	No.	
83	Buttevant -	72nd	25 July	No.	
84	„ -	„	8 Aug.	No.	
85	Palermo -	H.M.S. Lord Warden.	6 July	Slight when lying down, none when standing or kneeling.	
86	Channel -	H.M.S. Minotaur.	19 „	No.	
87	North America	H.M.S. Royal Alfred.	6 Sept.	Yes; the recoil is in excess of that of an ordinary rifle.	
88	Portsmouth -	H.M.S. Excellent.	7 Dec.	Not since the men have been cautioned not to place the thumb across the head of the stock.	
89	Plymouth -	H.M.S. Cambridge.	13 Oct.	Question not replied to.	
90	„ -	„	23 Dec.	No inconvenience, but the recoil is greater than that of the Snider.	
91	Morar -	1/11th	8 Oct.	The recoil is greater than that of the Enfield rifle, though not excessive. More than 100 rounds have been fired consecutively out of the same rifle, and no difference in recoil was perceptible.	
92	Dum Dum -	96th	11 Aug.	Yes, there is a good deal of recoil.	
93	Umballa -	106th	27 Sept.	No. It is rather more than in the Enfield rifle and is slightly increased when the rifle is dirty.	
94	Simla - -	Chief I. of M.	16 Oct.	The recoil is apparent when 100 or 150 rounds are fired in rapid succession, but it is insignificant for an ordinary number of rounds.	
95	Poona - -	1/2nd	18 „	No.	

Question 10.—Is any inconvenience experienced from recoil ?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
96	Kurrachee -	66th	26 Dec.	The recoil is considerable at first to men unaccustomed to the arm.	
97	Dugshaie -	1/3rd	11 „	No.	
98	Rawul Pindee -	36th	10 Nov.	Yes, though not so great as that of the Enfield. When the thumb is placed across the head of the stock the firer received a blow on the nose. The arms were not cleaned for a week, during which 120 rounds were fired from each arm, the shooting was as accurate as before, and the recoil not in the slightest degree increased.	
99	Lucknow -	62nd	17 Oct.	Yes, when the rifle is dirty the recoil is very great. Attributes it to the shape of the heel plate which does not fit the shoulders.	

Question 11.—Is the weight of the arm a practical objection on service?

51	Aldershot -	4th B. R. B.	1 June	No.	The great majority of the answers state that the weight of the arm is not a practical objection on service, but the Committee have ascertained by trial that the barrel of the Martini-Henry may advantageously be lightened.
52	„ -	1/4th	31 May	Too heavy to make real good standing practice.	
53	„ -	42nd	13 July	No.	
54	Montreal -	1st B. R. B.	31 May	No.	
55	„ -	„	30 June	No.	
56	„ -	„	31 July	No.	
57	„ -	„	19 Aug.	No.	
58	Quebec -	69th	31 May	No.	
59	„ -	„	30 June	No.	
60	„ -	„	31 July	No.	
61	„ -	„	31 Aug.	No.	
62	„ -	„	30 Sept.	No.	
63	„ -	„	4 Nov.	No.	
64	Hythe -	I. of M.	14 June	No.	
65	„ -	„	16 Aug.	No. But thinks it would be better if 5 ounces lighter.	
66	Portsmouth -	2/2nd	4 June	No.	
67	„ -	„	27 Aug.	No.	
68	„ -	R. M. L. I.	30 June	No.	
69	„ -	82nd	3 June	In a long march the inconvenience would be considerable.	
70	„ -	R. M. Artillery	1 July	No.	
71	„ -	1/25th	2 Aug.	Undoubtedly.	
72	„ -	77th	1 Aug.	No.	
73	„ -	„	18 Aug.	No.	
74	Kinsale -	1/22nd	9 July	Considers it so when fired at the standing position and when on the line of march.	
75	„ -	63rd	11 July	No.	
76	Youghal -	68th	1 July	No.	
77	Windsor -	2/S. Fus. Gds.	6 July	Yes. But thinks that if the weight was more evenly distributed it would not be so.	
78	„ -	„	1 Aug.	The same.	
79	Fermoy -	65th	25 July	No.	
80	„ -	„	13 Aug.	No.	
81	„ -	89th	25 July	No.	
82	Limerick -	„	11 Aug.	No.	
83	Buttevant -	72nd	25 July	No.	
84	„ -	„	8 Aug.	No.	
85	Palermo -	H.M.S. Lord Warden.	6 July	No.	
86	Channel -	H.M.S. Minotaur.	19 July	Yes, it is much too heavy for seamen, and when the bayonet is fixed, is overbalanced.	
87	North America	H.M.S. Royal Alfred.	6 Sept.	The rifle is one pound heavier than the present pattern, to a certain extent this must be considered as an objection.	
88	Portsmouth -	H.M.S. Excellent.	7 Dec.	No.	
89	Plymouth -	H.M.S. Cambridge.	13 Oct.	Question not replied to.	
90	„ -	„	23 Dec.	No.	

Question 11.—Is the weight of the arm a practical objection on service?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
91	Morar -	1/11th	8 Oct.	It is believed not.	
92	Dum Dum -	96th	11 Aug.	No. Thinks not.	
93	Umballa -	106th	27 Sept.	No. For shooting, an improvement.	
94	Simla -	Chief I. of M.	16 Oct.	The weight of the arm is its only drawback, but does not think it a practical objection.	
95	Poona -	1/2nd	13 „	Thinks it will be found heavy for the march, and is not well balanced.	
96	Kurrachee -	66th	26 „	Yes.	
97	Dugshaie -	1/3rd	11 „	No.	
98	Rawul Pindee	36th	10 Nov.	No.	
99	Lucknow -	62nd	17 Oct.	No.	

Question 12.—Is the position of the back-sight approved of?

51	Aldershot -	4th B. R. B.	1 June	Yes, for shooting; but inconvenient when the arm is carried at the trail.	The reports approve of the position of the back-sight for aiming, but consider that it is inconvenient when the arm is carried at the trail. This objection has been overcome by the difference of balance obtained in the lightened barrel, referred to in the remarks on Question 11. The form of the bar of the back-sight has been dealt with in the Appendix C., p. 52. It has been suggested that the back-sight should be more securely fastened on to the barrel. (Vide Appendix C., p. 52.)
52	„ -	1/4th	31 May	Yes.	
53	„ -	42nd	13 July	Yes, but inconvenient when trailing arms.	
54	Montreal -	1st B. R. B.	31 May	Yes.	
55	„ -	„	30 June	Yes.	
56	„ -	„	31 July	Yes.	
57	„ -	„	19 Aug.	Yes.	
58	Quebec -	69th	31 May	Very bad for trailing arms.	
59	„ -	„	30 June	The same.	
60	„ -	„	31 July	The same.	
61	„ -	„	31 Aug.	The same.	
62	„ -	„	30 Sept.	The same.	
63	„ -	„	4 Nov.	The same.	
64	Hythe -	S. of M.	14 June	Yes, for aiming; but inconvenient for trailing arms.	
65	„ -	„	16 Aug.	The same, and also inconvenient when the arm is used for bayonet exercise.	
66	Portsmouth -	2/2nd	4 June	Yes, for aiming; but inconvenient for trailing arms.	
67	„ -	„	27 Aug.	The same.	
68	„ -	R. M. L. I.	30 June	Yes.	
69	„ -	82nd	3 „	It is too forward, and is inconvenient for trailing arms. The notch has too wide a field. Considers the silver mark in the centre very good.	
70	„ -	R.M. Artillery	1 July	No. Considers it too far from the eye, and inconvenient when trailing arms.	
71	„ -	1/25th	2 Aug.	Very much so, but inconvenient for trailing arms.	
72	„ -	77th	1 „	No. Inconvenient for trailing arms, and when the left hand is placed for firing.	
73	„ -	„	18 „	The same.	
74	Kinsale -	1/22nd	9 July	Yes, but inconvenient for trailing arms.	
75	„ -	63rd	11 „	Yes. States that a notch, however slight, would be of great assistance to the soldier.	
76	Youghal -	68th	1 „	Yes. Recommends a line be drawn down inner side, like that on sliding bar, for distances up to 400 yards.	
77	Windsor -	2/S. Fus. Gds.	6 „	No. It is too far from the firer. The V is too wide, recommends a platinum line on interior edge of V.	
78	„ -	„	1 Aug.	No, it is too far from the eye, and inconvenient for trailing arms.	
79	Fermoy -	65th	25 July	Yes, but owing to the sides of the sight forming a more obtuse angle, men are liable to get the fore-sight to one side of the notch.	

Question 12.—Is the position of the back-sight approved of?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
80	Fermoy -	65th	13 Aug.	Yes. Recommends a platinum line for the centre of the back-sight for ranges up to 400 yards.	
81	" -	89th	25 July	Yes.	
82	Limerick -	"	11 Aug.	Yes. Considers that quicker and more accurate aim is obtained with the Martini-Henry than with the Snider, on account of the back-sight being further from the eye.	
83	Buttevant -	72nd	25 July	Yes. It being further forward on the barrel enables a soldier in shooting to get a firmer hold of the rifle with the left hand. Recommends a white line on centre of head of the flap, similar to that on the sliding bar, as at present it is difficult to get the tip of the fore-sight exactly in the centre of the notch of the back-sight.	
84	" -	"	8 Aug.	The same.	
85	Palermo -	H.M.S. Lord Warden.	6 July	Yes, for shooting; but inconvenient for trailing arms.	
86	Channel -	H.M.S. Minotaur.	19 "	Yes. Its form is greatly superior to that on the Snider Enfield.	
87	North America	H.M.S. Royal Alfred.	6 Sept.	The position is, but the arm is undersighted, and when firing at objects under 400 yards the line of sight is badly defined.	
88	Portsmouth -	H.M.S. Excellent.	7 Dec.	Yes, for firing; but the hand covers it when the rifle is at the trail. A deeper V would be preferred. The lines to guide the eye in aiming should be deeper and more distinct, as they become obliterated by wear.	
89	Plymouth -	H.M.S. Cambridge.	13 Oct.	Question not replied to.	
90	" -	"	23 Dec.	No, if placed nearer the breech a better alignment would be obtained, and be more convenient for carrying the arm at the trail.	
91	Morar -	1/11th	8 Oct.	It is. All who have fired with the rifle approved of the position of the back-sight.	
92	Dum Dum -	96th	11 Aug.	Yes, it is better placed than that of the Enfield. A deeper V would be preferred. The silver line very soon wears out, recommends the line be continued on the notch of the flap.	
93	Umballa -	106th	27 Sept.	Yes.	
94	Simla -	Chief I. of M.	16 Oct.	Yes. It is most advantageously placed.	
95	Poona -	1/2nd	13 "	A great improvement on the V shape, and less likely to be affected by the sun.	
96	Kurrachee -	66th	26 "	Yes, but the fore-sight appears too blunt for the improved back-sight.	
97	Dugshaie -	1/3rd	11 "	Yes. Considers the platinum lines to be of incalculable advantage. Recommends a similar line be placed for the shorter distances up to 400 yards.	
98	Rawul Pindee -	36th	10 Nov.	No. It is inconvenient for trailing arms. Considers the sight with the flap down too open and shallow, recommends a silver line like that on the sliding bar.	
99	Lucknow -	62nd	17 Oct.	Yes.	

Question 13.—How does the sword bayonet answer as a weapon of attack and defence?

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870,		
51	Aldershot -	4th B. R. B.	1 June	Well.	The majority of these answers are in favour of the sword bayonet. A modification of this pattern is now under trial and has been dealt with in the body of the Report.
52	" -	1/4th	31 May	It would be too heavy to recover after a lunge forward.	
53	" -	42nd	13 July	Very well.	
54	Montreal -	1st B. R. B.	31 May	Very well.	
55	" -	"	30 June	Very well.	
56	" -	"	31 July	Very well.	
57	" -	"	19 Aug.	Very well.	
58	Quebec -	69th	31 May	Very well.	
59	" -	"	30 June	Very well.	
60	" -	"	31 July	Very well.	
61	" -	"	31 Aug.	Very well.	
62	" -	"	30 Sept.	Very well.	
63	" -	"	4 Nov.	Very well.	
64	Hythe -	S. of M.	14 June	Not been tested.	
65	" -	"	16 Aug.	Very well.	
66	Portsmouth -	2/2nd	4 June	Preferred to the bayonet now in use in the service.	
67	" -	"	27 Aug.	Very well.	
68	" -	R. M. L. I.	30 June	Admirably.	
69	" -	82nd	3 "	Considered superior to the common one, as it can be used as a sword.	
70	" -	R.M. Artillery	1 July	Not been tested.	
71	" -	1/25th	2 Aug.	Very well.	
72	" -	77th	1 "	Very well.	
73	" -	"	18 "	Very well. Recommends the saw be extended to the hilt, and about 1½ inches towards the point.	
74	Kinsale -	1/22nd	9 July	Well.	
75	" -	63rd	11 "	Preferred to the old bayonet in its particular use, has advantage in forming a separate weapon.	
76	Youghal -	68th	1 "	Thinks it would act well, but makes the rifle heavy and unwieldy.	
77	Windsor -	2/S. Fus. Gds.	6 "	Question not replied to.	
78	" -	"	1 Aug.	The same.	
79	Fermoy -	65th	25 July	Well.	
80	" -	"	13 Aug.	Very well.	
81	" -	89th	25 July	Sees no reason to doubt that it would answer.	
82	Limerick -	"	11 Aug.	The same.	
83	Buttevant -	72nd	25 July	It seems a much more serviceable and useful weapon than the old bayonet.	
84	" -	"	8 Aug.	The same.	
85	Palermo -	H.M.S. Lord Warden.	6 July	Not been tested.	
86	Channel -	H.M.S. Minotaur.	19 "	Not been tested.	
87	North America	H.M.S. Royal Alfred.	6 Sept.	Not been tested.	
88	Portsmouth -	H.M.S. Excellent.	7 Dec.	Its adaptability for the naval service has been specially reported on.	
89	Plymouth -	H.M.S. Cambridge.	13 Oct.	Question not replied to.	
90	" -	"	23 Dec.	Yes.	
91	Morar -	1/11th	8 Oct.	When the sword is fixed, the weight of the rifle at the muzzle is very considerably increased, and in consequence is considered much inferior to the Enfield rifle as a weapon for attack and defence.	
92	Dum Dum -	96th	11 Aug.	Thinks it would be a formidable weapon.	
93	Umballa -	106th	27 Sept.	No means of trying it. It was driven through a door half an inch thick with no evil result.	
94	Simla - -	Chief I. of M.	16 Oct.	Question not replied to.	
95	Poona - -	1/2nd	13 "	As well as the bayonet.	
96	Kurrachee -	66th	26 "	Very well.	
97	Dugshaie -	1/3rd	11 "	Not been tested.	
98	Rawul Pindee -	36th	10 Nov.	Well.	
99	Lucknow -	62nd	17 Oct.	It appears suitable.	

Question 14.—Does it answer as an implement on service for cutting wood?

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
51	Aldershot	4th B. R. B.	1 June	Yes.	The balance of opinion is in favour of the saw.
52	"	1/4th	31 May	Yes.	
53	"	42nd	13 July	No. Length of saw too little, breadth too great.	
54	Montreal	1st B. R. B.	31 May	Yes.	
55	"	"	30 June	Yes.	
56	"	"	31 July	Yes.	
57	"	"	19 Aug.	Yes.	
58	Quebec	69th	31 May	Not very well.	
59	"	"	30 June	The same.	
60	"	"	31 July	The same.	
61	"	"	31 Aug.	The same.	
62	"	"	30 Sept.	The same.	
63	"	"	4 Nov.	The same.	
64	Hythe	S. of M.	14 June	Not been tested.	
65	"	"	16 Aug.	Yes, very well, but thinks the edges, of the inside of the guard and the form of the knob at the end of the hilt, too sharp. Recommends the serrated part be continued an inch further towards the point.	
66	Portsmouth	2/2nd	4 June	Yes.	
67	"	"	27 Aug.	Yes.	
68	"	R. M. L. I.	30 June	Yes.	
69	"	82nd	3 "	Could be used for cutting wood, but does not think it would stand hard work.	
70	"	R.M. Artillery	1 July	Not been tested.	
71	"	1/25th	2 Aug.	Yes; green wood is sawn across rapidly, bones and hard substances can also be cut.	
72	"	77th	1 "	Yes; it cuts bones better and neater than a butcher's saw. Recommends the teeth of the saw be extended to the hilt and one inch towards the point. The blade cut up meat better than the butcher's knife.	
73	"	"	18 "	The same.	
74	Kinsale	1/22nd	9 July	Yes.	
75	"	63rd	11 "	Yes; several bushes of furze were cut down, a 6-inch plank sawn through and chopped, and the rations for three companies were served out by the use of the sword bayonet.	
76	Youghal	68th	1 "	Yes.	
77	Windsor	2/S. Fus. Gds.	6 "	Question not replied to.	
78	"	"	1 Aug.	The same.	
79	Fermoy	65th	25 July	Yes.	
80	"	"	13 Aug.	Yes.	
81	"	89th	25 July	Yes.	
82	Limerick	"	11 Aug.	Yes.	
83	Buttevant	72nd	25 July	Yes.	
84	"	"	8 Aug.	It is useful both for cutting and sawing wood.	
85	Palermo	H.M.S. Lord Warden.	6 July	As a saw it works slowly, and is hard to grasp. It answers well as a butcher's knife.	
86	Channel	H.M.S. Minotaur.	19 "	Not been tested.	
87	N. America	H.M.S. Royal Alfred.	6 Sept.	No.	
88	Portsmouth	H.M.S. Excellent.	7 Dec.	Yes.	
89	Plymouth	H.M.S. Cambridge.	13 Oct.	Yes. It was tried both on and off the barrel on a quarter of beef dressed as a man, by striking with the edge and with the point. The trial was satisfactory in every respect.	
90	"	"	23 Dec.	Yes. Several poles of from 4 to 5 inches in diameter have been sawn through in good time.	

Question 14.—Does it answer as an implement on service for cutting wood ?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
91	Morar -	1/11th	8 Oct.	It cuts wood but slowly, seems better adapted for cutting up rations. Thinks that if more teeth were placed in the saw back this defect would be remedied.	
92	Dum Dum -	96th	11 Aug.	Yes; it would be very efficient.	
93	Umballa -	106th	27 Sept.	It will cut small boughs or wood sufficient for firewood, but the saw is not adapted for cutting timber for abattis, &c.	
94	Simla -	Chief I. of M.	16 Oct.	Does not think it will, there are too few teeth in the saw. It is heavier by 12 oz. than the common bayonet with scabbard, and it seems doubtful whether the supposed advantages of the sword bayonet will be found to counterbalance this increased weight.	
95	Poona -	1/2nd	13 „	Yes.	
96	Kurrachee -	66th	26 „	Yes.	
97	Dugshaie -	1/3rd	11 „	Both as a saw and a chopper, it appears to answer well.	
98	Rawul Pindee -	36th	10 Nov.	Yes.	
99	Lucknow -	62nd	17 Oct.	Yes.	

Question 15.—Are the cleaning implements (the jag and protector) found useful ?

51	Aldershot -	4th B. R. B.	1 June	Very. Recommends the protector being made of more lasting material.	The Committee are of opinion, as stated in their former Report, that the jag and protector are useful, and that they should be retained. They recommend a smaller jag for issue, to meet the objections urged.
52	„ -	1/4th	31 May	Yes.	
53	„ -	42nd	13 July	Yes; but considerable difficulty in working the cleaning rod, especially after blank firing.	
54	Montreal -	1st B. R. B.	31 May	Yes.	
55	„ -	„	30 June	Yes.	
56	„ -	„	31 July	Yes.	
57	„ -	„	19 Aug.	Yes.	
58	Quebec -	69th	31 May	Very useful.	
59	„ -	„	30 June	The same.	
60	„ -	„	31 July	The same.	
61	„ -	„	31 Aug.	The same.	
62	„ -	„	30 Sept.	The same.	
63	„ -	„	4 Nov.	The same.	
64	Hythe -	S. of M.	14 June	Yes.	
65	„ -	„	16 Aug.	Yes.	
66	Portsmouth -	2/2nd	4 June	The jags have not stood the constant use they are subjected to, two having broken and the others not working freely.	
67	„ -	„	27 Aug.	Yes; but the jags have become broken.	
68	„ -	R.M.L.I.	30 June	Yes.	
69	„ -	82nd	3 „	Very.	
70	„ -	R.M. Artillery	1 July	Yes.	
71	„ -	1/25th	2 Aug.	Yes.	
72	„ -	77th	1 „	Yes.	
73	„ -	„	18 „	Yes.	
74	Kinsale -	1/22nd	9 July	Yes.	
75	„ -	63rd	11 „	Yes.	
76	Youghal -	68th	1 „	Yes.	
77	Windsor -	2/S. Fus. Gds.	6 „	Yes, very.	
78	„ -	„	1 Aug.	Yes.	
79	Fermoy -	65th	25 July	Not been used yet.	
80	„ -	„	13 Aug.	Yes.	
81	„ -	89th	25 July	Yes.	
82	Limerick -	„	11 Aug.	Yes.	
83	Buttevant -	72nd	25 July	Yes.	
84	„ -	„	8 Aug.	Yes.	
85	Palermo -	H.M.S. Lord Warden.	6 July	Yes.	
86	Channel -	H.M.S. Minotaur.	19 „	Yes.	

Question 15.—Are the cleaning implements (the jag and protector) found useful?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
87	N. America -	H.M.S. Royal Alfred.	6 Sept.	Yes.	
88	Portsmouth -	H.M.S. Excellent.	7 Dec.	Yes; but very likely to be lost on service. For this reason, it is suggested that the muzzle protector be made of brass, screwed on its inside and fitted to screw on to the head of the cleaning rod when not in use, the cleaning rod having a thread under the head for the purpose of screwing the protector to it. The three protectors supplied to this ship have all been lost.	
89	Plymouth -	H.M.S. Cambridge.	13 Oct.	Question not replied to.	
90	" -	"	23 Dec.	Yes.	
91	Morar -	1/11th	8 Oct.	Very useful, but the jag is considered too large.	
92	Dum Dum -	96th	11 Aug.	Yes.	
93	Umballa -	106th	27 Sept.	Yes.	
94	Simla - -	Chief I. of M.	16 Oct.	Yes, most useful.	
95	Poona -	1/2nd	13 "	Owing to the climate the protectors have all broken to pieces. Recommends they should be made of brass.	
96	Kurrachee -	66th	26 "	Yes, certainly.	
97	Dugshaie -	1/3rd	11 "	Yes, very well, but the protector is too brittle.	
98	Rawul Pindee -	36th	10 Nov.	Yes.	
99	Lucknow -	62nd	17 Oct.	Yes, particularly the protector, which is found most useful in protecting the rifling during cleaning.	

Question 16.—Is the muzzle stopper found generally useful, and is it considered desirable to introduce it?

51	Aldershot -	4th B. R. B.	1 June	Very useful, particularly as a foresight protector.	Nearly the whole of the reports are in favour of the re-introduction of muzzle stoppers. Objections have, however, been urged to the pattern issued for trial. To obviate these, the Committee recommend for adoption a muzzle cover as proposed by Col. Dixon, Supt. R.S.A.F., which appears to remedy every fault attributed to the muzzle stoppers, and is besides considerably cheaper in manufacture.
52	" -	1/4th	31 May	Yes, particularly as a foresight protector.	
53	" -	42nd	13 July	Yes. Suggests a stopper to go over instead of into the muzzle, to avoid the risk of rust from a damp stopper, and the danger of a stopper becoming broken.	
54	Montreal -	4th B. R. B.	31 May	Yes.	
55	" -	"	30 June	Yes.	
56	" -	"	31 July	Yes.	
57	" -	"	19 Aug.	Yes.	
58	Quebec -	69th	31 May	Yes.	
59	" -	"	30 June	Yes.	
60	" -	"	31 July	Yes.	
61	" -	"	31 Aug.	Yes.	
62	" -	"	30 Sept.	Yes.	
63	" -	"	4 Nov.	Yes.	
64	Hythe -	S. of M.	14 June	Yes.	
65	" -	"	16 Aug.	Yes.	
66	Portsmouth -	2/2nd	4 June	It is generally approved of.	
67	" -	"	27 Aug.	Yes.	
68	" -	R.M.L.I.	30 June	No, and it is not desirable to introduce it; it is of no use, being in the way of the soldier, and not helping to preserve the bore. It would be of great use for sea service.	
69	" -	82nd	3 "	Most certainly.	
70	" -	R.M. Artillery	1 July	Yes.	
71	" -	1/25th	2 Aug.	Yes, but will entail extra expense on the men by their being lost.	
72	" -	77th	1 "	No. They are liable to become lost or mislaid, and will cause the muzzle to become honeycombed. Thinks the muzzle stopper dangerous, as the rifle might go off by accident, there being no half cock.	

Question 16.—Is the muzzle stopper found generally useful, and is it considered desirable to introduce it? —*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
73	Portsmouth -	77th	18 Aug.	The same.	
74	Kinsale -	1/22nd	9 July	Yes.	
75	" -	63rd	11 "	Yes; its introduction would be useful in keeping rust from the interior of the barrel in very damp climates.	
76	Youghal -	68th	1 "	Yes.	
77	Windsor -	2/S. Fus. Gds.	6 "	Yes. Thinks the present form is not good, as the bayonet cannot be fixed without removing it. Rifle No. 126 has received injury from the use of it.	
78	" -	"	1 Aug.	Yes.	
79	Fermoy -	65th	25 July	Yes, particularly the sight protector.	
80	" -	"	13 Aug.	Yes, particularly the sight protector, as it prevents the foresight being damaged so as to affect the shooting of the rifle.	
81	" -	89th	25 July	Yes.	
82	Limerick -	"	11 Aug.	Yes.	
83	Buttevant -	72nd	25 July	Yes. Very useful both for the protection of the barrel and the foresight.	
84	" -	"	8 Aug.	It is very useful, is a great protection to the sights, and ought most certainly to be introduced.	
85	Palermo -	H.M.S. Lord Warden.	6 July	Yes, but the size of the sight protector might be increased with advantage, so as to diminish the chance of the muzzle stopper being fired away.	
86	Channel -	H.M.S. Minotaur.	19 "	Yes.	
87	N. America -	H.M.S. Royal Alfred.	6 Sept.	Yes.	
88	Portsmouth -	H.M.S. Excellent.	7 Dec.	Yes, very useful, and very desirable that it should be introduced.	
89	Plymouth -	H.M.S. Cambridge.	13 Oct.	Question not replied to.	
90	" -	"	23 Dec.	Yes. It answers well.	
91	Morar -	1/11th	8 Oct.	Yes, very useful, and very desirable that it should be introduced. The danger of firing the rifle with the muzzle stopper is in a great measure remedied by the addition of the sight protector.	
92	Dum Dum -	96th	11 Aug.	No. It is sure to be lost on service, and any small quantity of dirt that would get into the barrel would do no harm.	
93	Umballa -	106th	27 Sept.	Yes, and, from its protecting the sight, would be very useful if introduced into the service.	
94	Simla -	Chief I. of M.	16 Oct.	No, it is more than superfluous. It has already slightly corroded the bore of the rifle No. $\frac{1269}{H}$ as far as it has been in contact with the bore.	
95	Poona -	1/2nd	13 "	Yes.	
96	Kurrachee -	66th	26 "	Most desirable in every respect.	
97	Dugshaie -	1/3rd	11 "	Yes, and is considered desirable to introduce it, first as a means of excluding air, and secondly, as a protection to the foresight.	
98	Rawul Pindee -	36th	10 Nov.	Yes, most desirable.	
99	Lucknow -	62nd	17 Oct.	Yes.	

Question 17.—Has the ammunition been found liable to become broken or damaged in transport, or when carried in the men's pouches?

Number of Report.	Station.	Regiment	Date.	Answers.	Remarks of Committee.
			1870.		
51	Aldershot -	4th B. R. B.	1 June	No.	The same remarks apply as were made in the Committee's former Report. The great majority of the reports state that the ammunition has not become broken or damaged. The shorter cartridge will be found even less liable to injury.
52	" -	1/4th	31 May.	No.	
53	" -	42nd	13 July	No.	
54	Montreal -	1st B.R.B.	31 May	No pouches suitable for the ammunition have at present been issued.	
55	" -	"	30 June	The same.	
56	" -	"	31 July	The same.	
57	" -	"	19 Aug.	The same.	
58	Quebec -	69th	31 May	No.	
59	" -	"	30 June	No.	
60	" -	"	31 July	No.	
61	" -	"	30 Aug.	No.	
62	" -	"	30 Sept.	No.	
63	" -	"	4 Nov.	No.	
64	Hythe - -	S. of M.	14 June	Not been tested.	
65	" -	"	16 Aug.	The same.	
66	Portsmouth -	2/2nd	4 June	It is so strong that it is not liable to injury from the ordinary usage in the service.	
67	" -	"	27 Aug.	No.	
68	" -	R. M. L. I.	30 June	No.	
69	" -	82nd	3 "	No.	
70	" -	R.M. Artillery	1 July	Has not been severely tested.	
71	" -	1/25th	2 Aug.	Very few cartridges were rendered useless until exposed to very rough usage.	
72	" -	77th	1 "	No. One tied up packet of ball ammunition was steeped in a tub of water and left to dry for 20 hours; two rounds missed fire once, a third and fourth would not go off at all. The remaining six were left to dry for one week, and they all went off without a miss-fire. The brown paper remained very damp after drying for 20 hours, which caused difficulty in loading, but after drying for one week no difficulty was experienced.	
73	" -		18 "	No. One tied up packet of 10 rounds ball cartridge was steeped in water for five minutes, left to dry for 20 hours, and then fired; eight rounds went off without a miss-fire, though they slightly hung fire and made bad practice. The two remaining cartridges missed fire twice, on examination they were found completely saturated. Ten loose rounds were tried in the same manner, they all went off without a miss-fire, but slightly hung fire and made bad practice.	
74	Kinsale -	1/22nd	9 July	No.	
75	" -	63rd	11 "	No.	
76	Youghal -	68th	1 "	No.	
77	Windsor -	2/S. Fus. Gds.	6 "	No; but in a few cases the cartridges have become bent.	
78	" -	"	1 Aug.	Not been carried in the pouches but is liable to damage from transport owing to its length.	
79	Fermoy -	65th	25 July	No.	
80	" -	"	13 Aug.	No. The ammunition was carried several miles daily during the trials.	
81	" -	89th	25 July	No.	
82	Limerick -	"	11 Aug.	No.	
83	Buttevant -	72nd	25 July	No.	
84	" -	"	8 Aug.	During the trials five rounds of loose ammunition have been carried in the men's pouches and have not been the least damaged.	

Question 17.—Has the ammunition been found liable to become broken or damaged in transport, or when carried in the men's pouches?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
85	Palermo -	H.M.S. Lord Warden.	6 July	Not with ordinary usage. Thirty rounds were carried loose in a pouch for six days, the pouch was then trampled upon and thrown from one deck to another; after this very severe treatment six cartridges were found so damaged as to prevent easy loading.	
86	Channel -	H.M.S. Minotaur.	19 July	No.	
87	North America	H.M.S. Royal Alfred.	6 Sept.	Not been tested.	
88	Portsmouth -	H.M.S. Excellent.	7 Dec.	A very small per-centage (12 in 6,850 rounds) have become bent when carried in the men's pouches.	
89	Plymouth -	H.M.S. Cambridge.	13 Oct.	Question not replied to.	
90	" -	"	23 Dec.	Not to any great extent.	
91	Morar -	1/11th	8 Oct.	A few rounds on opening the ammunition boxes were found bent or otherwise slightly damaged, but the per-centage was very trifling. The ammunition does not become damaged by being carried in the men's pouches, and it is not affected by climatic influences.	
92	Dum Dum -	96th	11 Aug.	A very small proportion has been bulged, but easily made available. One cartridge was found cut round the base but was fired afterwards.	
93	Umballa -	106th	27 Sept.	No; a few rounds were found to be bent from the packing, but could not be damaged in the men's pouches.	
94	Simla -	Chief I. of M.	16 Oct.	Yes. In several instances the cartridges have suffered in transport.	
95	Poona -	1/2nd	13 "	A few have been damaged in transport, but have not been carried in the men's pouches.	
96	Kurrachee -	66th	26 "	No. Slightly in ball bag.	
97	Dugshaie -	1/3rd	11 "	No.	
98	Rawul Pindee -	36th	10 Nov.	Yes. Many of the cartridges became bent in packing; 200 cartridges were carried in the men's pouches, 4 became bent and damaged, but not rendered unserviceable.	
99	Lucknow -	62nd	17 Oct.	Not in transport, but when carried in the men's pouches they became bent.	

Question 18.—Has any difficulty arisen from this cause in loading or extracting?

51	Aldershot -	4th B. R. B.	1 June	No.	The answers appear very satisfactory. The Committee, however, as stated in their former Report, recognize in the absence of paper on the shorter cartridge a very great advantage.
52	" -	1/4th	31 May	No.	
53	" -	42nd	13 July	No.	
54	Montreal -	1st B. R. B.	31 May	No.	
55	" -	"	30 June	No.	
56	" -	"	31 July	No.	
57	" -	"	19 Aug.	No.	
58	Quebec -	69th	31 May	No.	
59	" -	"	30 June	No.	
60	" -	"	31 July	No.	
61	" -	"	31 Aug.	No.	
62	" -	"	30 Sept.	No.	
63	" -	"	4 Nov.	No.	
64	Hythe -	S. of M.	14 June	Not been tested.	
65	" -	"	16 Aug.	The same.	

Question 18.—Has any difficulty arisen from this cause in loading or extracting ?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
66	Portsmouth -	2/2nd	4 June	No.	
67	" -	"	27 Aug.	No.	
68	" -	R. M. L. I.	30 June	No.	
69	" -	82nd	3 "	No.	
70	" -	R. M. Artillery	1 July	No.	
71	" -	1/25th	2 Aug.	When the cartridges were at all damaged, increased difficulty of loading and extracting was experienced, which seems certain to happen so long as the cartridge fits so exactly.	
72	" -	77th	1 "	In one case where the cartridge was bent.	
73	" -	"	18 Aug.	No. If the base disc becomes bent the cartridge cannot be inserted.	
74	Kinsale -	1/22nd	9 July	No.	
75	" -	63rd	11 July	No.	
76	Youghal -	68th	1 July	Difficulty has arisen from bent cartridges.	
77	Windsor -	2/S. Fus. Gds.	6 "	No.	
78	" -	"	1 Aug.	Yes, occasionally.	
79	Fermoy -	65th	25 July	No.	
80	" -	"	13 Aug.	No.	
81	" -	89th	25 July	No.	
82	Limerick -	"	11 Aug.	No.	
83	Buttevant -	72nd	25 July	If the cartridge becomes bent the loading is difficult, but there is no difficulty in extracting.	
84	" -	"	8 Aug.	No.	
85	Palermo -	H.M.S. Lord Warden.	6 July	Only two cartridges have been found, besides those mentioned in answer to Question No. 17, which presented any difficulty in loading.	
86	Channel -	H.M.S. Minotaur.	19 "	No.	
87	N. America -	H.M.S. Royal Alfred.	6 Sept.	No.	
88	Portsmouth -	H.M.S. Excellent.	7 Dec.	There was some slight difficulty with the bent cartridges.	
89	Plymouth -	H.M.S. Cambridge.	13 Oct.	Question not replied to.	
90	" -	"	23 Dec.	Yes. Difficulties occurred in loading when the cartridges became bent.	
91	Morar -	1/11th	8 Oct.	A few bent cartridges would not fit the breech or press home on this account, but no difficulty has been experienced in extracting any cartridge.	
92	Dum Dum -	96th	11 Aug.	Yes. Slight difficulties have arisen.	
93	Umballa -	106th	27 Sept.	No. When the cartridges are bent they will not enter the breech, but there has been no difficulty in extracting any cartridge.	
94	Simla -	Chief I. of M.	16 Oct.	Yes. Slight difficulties in loading but not in extracting.	
95	Poona -	1/2nd	13 Oct.	It is impossible to load if the cartridge is badly bent or the base not placed on square.	
96	Kurrachee -	66th	26 "	Slight difficulty in loading.	
97	Dugshaie -	1/3rd	11 "	No.	
98	Rawul Pindee -	36th	10 Nov.	Yes, in loading. If the cartridges were bent they would not enter the barrel easily.	
99	Lucknow -	62nd	17 Oct.	Yes. Very often in loading.	

Question 19.—Is the form of the cartridge convenient to use?

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
51	Aldershot -	4th B.R.B.	1 June	Yes.	The same remarks apply as were made in the Committee's former report. The shorter cartridge will probably satisfy the requirements of those who object to the long cartridge. In Report 77 compressed powder is suggested. Uniform shooting has, however, not yet been obtained with powder of this description.
52	" -	1/4th	31 May	Yes.	
53	" -	42nd	13 July	Too long, is liable to become damaged, and entails cumbersome pouches.	
54	Montreal -	1st B.R.B.	31 May	Yes.	
55	" -	"	30 June	Yes.	
56	" -	"	31 July	Yes.	
57	" -	"	19 Aug.	Yes.	
58	Quebec -	69th	31 May	Yes, if not quite so long.	
59	" -	"	30 June	The same.	
60	" -	"	31 July	The same.	
61	" -	"	31 Aug.	The same.	
62	" -	"	30 Sept.	The same.	
63	" -	"	4 Nov.	The same.	
64	Hythe -	S. of M.	14 June	The ball cartridge is too long.	
65	" -	"	16 Aug.	It is decidedly objectionable.	
66	Portsmouth -	2/2nd	4 June	Yes.	
67	" -	"	27 Aug.	Yes; but prefers a shorter cartridge.	
68	" -	R.M.L.I.	30 June	Yes.	
69	" -	82nd	3 "	Yes; but would be more convenient if made one half inch shorter.	
70	" -	R.M. Artillery	1 July	Yes.	
71	" -	1/25th	2 Aug.	Yes; excepting that its long narrow form renders it liable to injury.	
72	" -	77th	1 Aug.	Yes; but would be better if shorter.	
73	" -	"	18 Aug.	Yes. Considers it fits the chamber too lightly, and would be better if shorter.	
74	Kinsale - -	1/22nd	9 July	Yes.	
75	" -	63rd	11 "	Yes.	
76	Youghal -	68th	1 "	No; it is too long.	
77	Windsor -	2/S. Fus. Gds.	6 "	Yes; but recommends cartridges with compressed powder.	
78	" -	"	1 Aug.	It is too long.	
79	Fermoy -	65th	25 July	Yes.	
80	" -	"	13 Aug.	Yes.	
81	" -	89th	25 July	Yes.	
82	Limerick -	"	11 Aug.	Yes.	
83	Buttevant -	72nd	25 July	Yes; but would be better if shorter.	
84	" -	"	8 Aug.	Yes.	
85	Palermo -	H.M.S. Lord Warden.	6 July	Yes.	
86	Channel -	H.M.S. Minotaur.	19 "	Yes.	
87	N. America -	H.M.S. Royal Alfred.	6 Sept.	Yes.	
88	Portsmouth -	H.M.S. Excellent.	7 Dec.	Yes; but a shorter cartridge would be better.	
89	Plymouth -	H.M.S. Cambridge.	13 Oct.	Question not replied to.	
90	" -	"	23 Dec.	It would be better if shorter.	
91	Morar - -	1/11th	8 Oct.	No; it is too long, and the paper covering occasionally strips and causes slight difficulty in pressing the cartridge home.	
92	Dum Dum -	96th	11 Aug.	Yes, but it is too long.	
93	Umballa -	106th	27 Sept.	Yes.	
94	Simla - -	Chief I. of M.	16 Oct.	If the cartridge could be shortened it would be a valuable improvement.	
95	Poona - -	1/2nd	13 "	Yes, but its length makes it liable to be easily damaged.	
96	Kurrachee -	66th	26 "	No.	
97	Dugshaie -	1/3rd	11 "	Thinks it too long, and is liable to become bent.	
98	Rawul Pindee -	36th	10 Nov.	Yes; but considers them too long.	
99	Lucknow -	62nd	17 Oct.	It is too long and slight.	

Question 20.—Have any of the cartridges cut round the base?

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
51	Aldershot -	4th B. R. B.	1 June	No.	The reports appear very satisfactory, and with regard to the cutting of some of the blank cartridges round the base, the Committee would refer to their remarks on Question 3.
52	" -	1/4th	31 May	No.	
53	" -	42nd	13 July	No.	
54	Montreal -	1st B. R. B.	31 May	No.	
55	" -	"	30 June	No.	
56	" -	"	31 July	No.	
57	" -	"	19 Aug.	No.	
58	Quebec -	69th	31 May	No.	
59	" -	"	30 June	No.	
60	" -	"	31 July	No.	
61	" -	"	31 Aug.	No.	
62	" -	"	30 Sept.	No.	
63	" -	"	4 Nov.	No.	
64	Hythe - -	S. of M.	14 June	No.	
65	" -	"	16 Aug.	No.	
66	Portsmouth -	2/2nd	4 June	No.	
67	" -	"	27 Aug.	No.	
68	" -	R. M. L. I.	30 June	No.	
69	" -	82nd	3 "	No.	
70	" -	R. M. Arty.	1 July	No.	
71	" -	1/25th	2 Aug.	No.	
72	" -	77th	1 "	Several blank cartridges cut round the base on extraction, thereby causing delay and difficulty. *Vide* Answer to Question No. 3.	
73	" -	"	18 Aug.	The same.	
74	Kinsale -	1/22nd	9 July	No.	
75	" -	63rd	11 "	No; but remarks that in 9 cases out of 10 there is an escape of gas at the base.	
76	Youghal -	68th	1 "	No.	
77	Windsor -	2/S. F. Gds.	6 "	No.	
78	" -	"	1 Aug.	One, fired from rifle No. 151.	
79	Fermoy -	65th	25 July	No.	
80	" -	"	13 Aug.	No.	
81	" -	89th	25 July	No.	
82	Limerick -	"	11 Aug.	No.	
83	Buttevant -	72nd	25 July	No.	
84	" -	"	8 Aug.	No.	
85	Palermo -	H.M.S. Lord Warden	6 July	No.	
86	Channel -	H.M.S. Minotaur	19 "	No.	
87	N. America -	H.M.S. Royal Alfred	6 Sept.	No.	
88	Portsmouth -	H.M.S. Excellent	7 Dec.	No.	
89	Plymouth -	H.M.S. Cambridge	13 Oct.	Question not replied to.	
90	" -	"	23 Dec.	No.	
91	Morar - -	1/11th	8 Oct.	No.	
92	Dum Dum -	96th	11 Aug.	No.	
93	Umballa -	106th	27 Sept.	No.	
94	Simla - -	Chief I. of M.	16 Oct.	No.	
95	Poona - -	1/2nd	13 "	No.	
96	Kurrachee -	66th	26 "	No.	
97	Dugshaie -	1/3rd	11 "	No.	
98	Rawul Pindee -	36th	10 Nov.	No.	
99	Lucknow -	62nd	17 Oct.	No.	

Question 21.—Have any of the caps given way?

51	Aldershot -	4th B. R. B.	1 June	No.	In reports Nos. 77 and 78, twenty-two instances are reported of caps giving way. This is very exceptional, nearly all the reports stating that there have been no such instances. The Committee consider that the giving way of the caps in reports Nos. 77 and 78 was due to the piston of one of the rifles being either
52	" -	1/4th	31 May	Question not replied to.	
53	" -	42nd	13 July	No.	
54	Montreal -	1st B. R. B.	31 May	No.	
55	" -	"	30 June	No.	
56	" -	"	31 July	No.	
57	" -	"	19 Aug.	No.	
58	Quebec -	69th	31 May	No.	
59	" -	"	30 June	No.	
60	" -	"	31 July	No.	
61	" -	"	31 Aug.	No.	
62	" -	"	30 Sept.	No.	
63	" -	"	4 Nov.	No.	
64	Hythe -	I. of M.	14 June	No.	
65	" -	"	16 Aug.	No.	

Question 21.—Have any of the caps given way ?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Commitee.
			1870.		too long or too sharp. The length of piston has now been distinctly laid down, and it is believed that this inconvenience will not again occur.
66	Portsmouth -	2/2nd	4 June	No.	
67	„ -	„	27 Aug.	No.	
68	„ -	R. M. L. I.	30 June	No.	
69	„ -	82nd	3 „	No.	
70	„ -	R. M. A.	1 July	Yes. In one case.	
71	„ -	1/25th	2 Aug.	No.	
72	„ -	77th	1 „	Not when the cartridges were in a dry state.	
73	„ -	„	18 „	The same.	
74	Kinsale -	1/22nd	9 July	Yes. In one case.	
75	„ -	63rd	11 „	No.	
76	Youghal -	68th	1 „	Yes. In one case (blank).	
77	Windsor	2nd S. F. G.	6 „	Yes. In twelve cases.	
78	„ -	„	1 Aug.	Ten since last report.	
79	Fermoy -	65th	25 July	No.	
80	„ -	„	13 Aug.	No.	
81	„ -	89th	25 July	No.	
82	Limerick -	„	11 Aug.	No.	
83	Buttevant -	72nd	25 July	No.	
84	„ -	„	8 Aug.	No.	
85	Palermo -	H.M.8. Lord Warden.	7 July	No.	
86	Channel -	H.M.S. Minotaur.	19 „	No.	
87	N. America -	H.M.S. Royal Alfred.	6 Sept.	No.	
88	Portsmouth -	H.M.S. Excellent.	7 Dec.	Three caps appear to have given way, and are forwarded.	
89	Plymouth -	H.M.S. Cambridge.	13 Oct.	Question not replied to.	
90	„ -	„	23 Dec.	No.	
91	Morar - -	1/11th	8 Oct.	In one instance only, they were generally found good.	
92	Dum Dum -	96th	11 Aug.	No.	
93	Umballa -	106th	27 Sept.	No.	
94	Simla - -	Chief I. of M.	16 Oct.	In one instance only.	
95	Poona - -	1/2nd	13 Oct.	No.	
96	Kurrachee -	66th	26 „	Yes; four have become unserviceable.	
97	Dugshaie -	1/3rd	11 „	No.	
98	Rawul Pindee	36th	10 Nov.	Question misunderstood.	
99	Lucknow -	62nd	17 Feb.	No.	

General Observations.

51	Aldershot -	4th B. R. B.	1 June	None.	
52	„ -	1/4th	31 May	States that the firing from 400 to 900 yards was far more accurate than the Snider, but the rifle is rather under-sighted at the longer distances. Considers the Snider rifle the best that can be put into a soldier's hands, and fears anything that tends to give rapidity in loading and firing would cause a wasteful expenditure of ammunition. Remarks that even with the Snider it is difficult to keep the fire under control as shown at Arogee and at the capture of Magdala in Abyssinia.	The Committee following a similar course with that pursued in their former report proceed to group the several criticisms not dealt with in the answers to the 21 questions under the following heads:
53	„ -	42nd	13 July	The general observations in the former report are applicable to this one in all respects.	I.—Miss-fires. Since the substitution of the stronger spiral springs miss-fires have practically ceased. Some of the weak springs first issued with the rifles were not replaced when the Indian Reports were made out.
54	Montreal -	1st B. R. B.	31 May	Since the new springs have been put in, the "pull off" has been so great that it has been impossible to make accurate shooting. The "pull off" in some cases is as much as 12 lbs.	II.—Breech Mechanism.
55	„ -	„	30 June	None.	*a.—Pull off of trigger.*
56	„ -	„	31 July	None.	
57	„ -	„	19 Aug.	None.	Several reports mention that the pull off of the trigger has become too strong and
58	Quebec -	69th	31 May	None.	
59	„ -	„	30 June	None.	

General Observations—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
60	Quebec -	69th	31 July	Considers the Martini-Henry far superior to the Snider in accurate shooting. It has been thoroughly tested up to 1,100 yards. Thinks the "pull off" is too great.	irregular since the adoption of the stronger springs. This would arise from the pull off having been originally adapted to the weaker springs. The Superintendent Royal Small Arms Factories states that there will be no difficulty in regulating the pull off to any weight that may be required, and when the action is in good order, he sees no reason why the pull off should be less regular than with the ordinary lock. (*Vide* Colonel Dixon's evidence page 75.)
61	" -	"	31 Aug.	Considers the "pull off" too great.	
62	" -	"	30 Sept.	Remarks that the pull off is too great. States that 10 rounds were fired in volleys at 1,100 yards with an average of 15·401 and 10 rounds in independent firing at the same distance produced a result of 13·80.	
63	" -	"	4 Nov.	Remarks that the pull off is too great.	
64	Hythe - -	S. of M.	14 June	None.	
65	" -	"	16 Aug.	Recommends the stock about two inches in front of the trigger guard to be a little broader and more rounded to enable the left hand to grasp more firmly. The comb of the stock butt is too near the breech block; thinks that if the small be continued 1½ inches further back, it would be more convenient. The stock is too short, the firer's nose is often hurt by the recoil. Remarks that the V is too shallow; recommends a vertical line be marked from the centre. States that the accuracy of the Martini-Henry in shooting is most remarkable, and their superiority over the Snider more especially marked the greater the distance. The deflection caused by high winds is only one half that of the Snider. The penetration of the bullet is very great. Thinks the arm would be perfect if it was made a few ounces lighter, the form of the small where the right hand holds it, rendered more convenient by prolonging the lever 1½ inches, reducing the size of the loop, and altering the comb of the stock. Recommends that the side plates be case hardened owing to rust accumulating on them to a great extent. States that the worm of the cleaning rod is liable to be injured or worn.	*b.—Side plates.* One report, No. 65, recommends that the side plates should be case hardened. This is a manufacturing question, which may safely be left to the Superintendent Royal Small Arms Factories. *c.—Wear of surface levers.* One report, No. 68, mentions that the surface of the lever of five rifles has become worn through use. Colonel Dixon's report, after examination of these arms, expressly contradicts this statement, and therefore what was supposed to have been wear was probably a mere burnishing of the surfaces. *d. Form of lever.* One report, No. 65, recommends another form of lever. The Committee have recommended a modification of the present form which somewhat resembles that suggested.
66	Portsmouth -	2/2nd	4 June	Remarks that the pull off of all the rifles (especially rifle No. 9) was very irregular, they sometimes requiring a very heavy and at other times a light pressure. Frequent firing appears to have enlarged the chambers of the rifles.	*e.—Locking bolt.* Two reports, Nos. 92 and 104 object to the locking bolt, considering it a useless addition to the action. The majority of the reports do not however object to it, and the Committee consider its retention desirable.
67	" -	"	27 Aug.	The spring and catch of the cover of the cavity in the butt do not appear equal to endure the rough usage of service; two having become unserviceable and the remainder more or less injured.	
68	" -	R. M. L. I.	30 June	Remarks that the arm is capable of enduring any amount of rough usage and exposure to weather. The immense superiority of the Martini-Henry over the Snider, in length of range, power, and accuracy can hardly be over-	

General Observations—*continued.*

Number or Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
68	Portsmouth - *cont.*	R. M. L. I.	1870. 30 June	rated. The rapidity of fire is twice that of the Snider. Recommends the flap of the trap in the butt to be fitted at an angle of 80° instead of at present at 90°. Remarks that considerable amount of play has become observable in the lever, on examination it was found that at the "nose" of the lever, and the step of the block against which the "nose" works, there was considerable wear. It was probably owing to this that the lever did not always latch itself but remained about half an inch distant from the catch; no inconvenience was experienced from this. The pull off of two rifles, Nos. 6 and 8 have become bad. The black pouch is approved of.	III.—Arm generally objected to as too long. Two reports, Nos. 92 and 104, in addition to those from the navy recommend a shorter arm. The Committee have already expressed their opinion on this subject, viz., that they recommend a somewhat shorter arm for general service. IV.—Form of Stock. One report, No. 65, suggests that the fore end of the stock in front of the trigger-guard should be made broader and more rounded, so as to render the grasp more solid. It also suggests an alteration in the comb of the stock. The Committee have recommended the latter alteration, but do not consider the former necessary.
69	" -	82nd	3 June	The Martini-Henry is far more accurate at the long ranges than the Snider, but consider the Snider a much more serviceable weapon in the hands of the soldier on account of its simplicity, lightness, little recoil and facility of repairing any slight damage to lock or rifle.	
70	" -	R. M. Artillery	1 July	The end of the cleaning rod in rifle No. 198, when screwed in tightly, presses against the extractor and interferes with the proper action of the mechanism.	
71	" -	1/25th	2 Aug.	Considers the Martini-Henry superior to the Snider in the following respects; in accuracy and in flatness of trajectory, in the position of the back-sight, and in having no hammer, although when loaded it is more difficult to ascertain whether the rifle is at full cock, but considers it inferior in balance, in the recoil being greater and the barrel getting almost too hot to hold after ten rounds has been fired, and in the simplicity of the breech mechanism. Considers that on the whole the Martini-Henry is not calculated to be a practical arm for the whole service, but an excellent rifle for good shots where employed as sharpshooters, provided the recoil be lessened and the pull-off regulated.	V.—Other Objections. 1. *Cleaning rods.* Three reports, Nos. 65, 70, and 91, object to the method of securing the cleaning rods as they frequently work loose. This subject has been dealt with in Appendix C., page 52. 2. *Trap in butt objected to.* Two reports, No. 67 and 68, object to the trap in the butt. The Committee recognize the defects in the trap, and have recommended that it be done away with. Vide Appendix C., page 52.
72	" -	77th	1 "	States that the recoil was very great when the rifles were rusty, and the pull-off was considerably increased. Rifle No. 2, from 6½ lbs. to 17 lbs. Remarks that the rifles are very accurate up to 1,200 yards, but that they are slightly undersighted after 500 yards. The men complained of the breadth of the notch of the back sight. Remarks that there appears to be a good deal of unconsumed powder after discharge, which would cause fouling.	3. *Barrel becoming too hot.* Five reports, Nos. 71, 73, 87, 94, and 97, complain that the barrel becomes too hot to touch after very rapid firing. This is an objection common to all rapidly firing arms, but the Committee consider that, on service, circumstances would rarely arise wher such rapid firing as would make the barrel too hot to hold would be required.

General Observations—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
73	Portsmouth	77th	1870. 18 Aug.	States that 30 rounds of blank cartridge were fired in one minute. Thinks the ordinary "independent" firing quick enough for the soldier; more rapid firing makes the barrel too hot to hold. Considers the Martini-Henry a far more serviceable arm than the Snider, especially in accuracy and flatness of trajectory. It is also far superior to the Snider in its higher penetrating power and in the strength and simplicity of its breech mechanism, also in the strength and safety of the ammunition and rapidity of fire. States that if the pull-off could be regulated so as to remain uniform much better practice could be made.	4. *Rifles under-sighted at long ranges.* Two reports, Nos. 52 and 72, point out this defect. Attention will be given to this point before a pattern arm for final adoption is decided upon. 5. *Chambers become enlarged.* One report, No. 66, remarks that the chambers of rifles Nos. 6, 7, 8, 9, and 10 appeared to have become enlarged by firing, but this opinion is unsupported by actual measurement, the Superintendent Royal Small Arms Factories has reported that he was unable to detect any difference of size between these and other chambers. On comparing the casts of chambers taken before and after firing rapidly a thousand rounds of blank cartridge, no difference in size could be detected. VI. Objections to Pouch and Ball Bag. One report, No. 96, objects to the pouch and ball bag. The Committee, in their former report, pointed out that this subject was not referred to them, and recommended that attention should be called to it.
74	Kinsale	1/22nd	9 July	Rifle No. 89 was bulged near the muzzle by being fired accidentally in the barrack room with the muzzle stopper in. Remarks that the pull-off appears too strong.	
75	"	63rd	11 "	States that for strength, simplicity, durability, and accuracy, the Martini-Henry is as complete a weapon as could be desired for a soldier's arm. Suggests a lighter pull-off. For rapidity of fire it excels the Snider by about three to two.	
76	Youghal	68th	1 "	Thinks the breech action would get out of order if exposed to much rain, but has not proved this by trial. The Martini-Henry is much preferred by the men to the Snider.	
77	Windsor	2/ S. F. Guards	6 "	Considers that the most objectionable points are:— 1st. The additional weight. 2nd. The balance. 3rd. The sword bayonet too heavy. 4th. The muzzle stopper too heavy. Suggests that the muzzle protector should be converted into a stopper by means of a brass spring lid. Recommends that the foresight should be made of stronger metal. States that with the following alterations the Martini-Henry would be the most perfect breech-loading rifle ever placed in the hands of a soldier, viz.:— 1st. The back sight should be moved further back. 2nd. The V should not be so deep. 3rd. The sword bayonet should be modified in form and weight. 4th. The muzzle stopper should be made of lighter material. 5th. The butt should be more bent, in order to lessen the recoil. 6th. That preference should be given to a cartridge with powder in a compressed form. 7th. That means should be used to obtain waterproof cartridges.	

General Observations—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
77	Windsor—*continued.*	2/S. F. Grds.	6 July	Remarks that the breech blocks in rifles Nos. 4 and 193 varied considerably in manufacture. Rifle No. 193 has fired 3,159 rounds of ball and 1,020 rounds of blank cartridge without being cleaned, and though the breech action cannot be said to work perfectly, owing to some small defect of the extractor, the arm is in a fairly serviceable condition, and the accuracy superior to that of any of the other four rifles now under trial.	
78	" -	"	1 Aug.	The same. Rifle No. 193 has now fired 5,079 rounds of ball and 1,020 rounds of blank cartridge without being cleaned.	
79	Fermoy -	65th	25 July	None.	
80	" -	"	13 Aug.	Considers the Martini-Henry far superior to the Snider at the longer ranges, over 400 yards.	
81	" -	89th	25 July.	Considers the Martini-Henry superior to the Snider in accuracy and celerity of fire; also its having greater penetration and a flatter trajectory.	
82	Limerick -	"	11 Aug.	The trials were only partially carried out, viz., for eight days instead of one month.	
83	Buttevant -	72nd	25 July.	None.	
84	" -	"	8 Aug.	None.	
85	Palermo -	H.M.S. Lord Warden.	6 July.	Remarks that the arm is generally liked by the men, who quickly become accustomed to the working of the breech action.	
86	Channel -	H.M.S. Minotaur.	19 July.	States that the pull-off of the rifles have been very uncertain. Rifle No. 113 hung fire three times, and went off on coming to the ready position. With rifle No. 130, on the first day's firing, the pull-off was too light; it was altered, but was not satisfactory when the rifle was heated. Remarks that the length from the butt to the trigger is too long for the average seamen without a rest, and great as the advantages of the new arm are in accurate shooting and in detail, considers it inferior to the Snider for seamen if the weight be not reduced to that of the latter.	
87	North America	H.M.S. Royal Alfred.	6 Sept.	Remarks that the simplicity of the loading mechanism would come into full play when firing volleys advancing in charging order. The barrel becomes unbearably hot after firing 20 or 30 rounds quickly, owing, probably, to the thickness of barrel and nature of the cartridge. The deflection in a strong wind was found less than the Snider.	
88	Portsmouth -	H.M.S. Excellent.	7 Dec.	States that all the cartridges that missed fire once exploded the second time except eight, which failed five times. Remarks that the rifles have been continually in use, and have had severe trials in bad weather. They have been frequently dismounted for instruction. They are well adapted for the naval service, as they have no projections,	

General Observations—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
88	Portsmouth—*continued.*	H.M.S. Excellent.	1870. 7 Dec.	such as hammers, to catch the boats thwarts, or ropes in going aloft, but would be more convenient if shorter. They have given great satisfaction to both officers and men.	
89	Plymouth -	H.M.S. Cambridge.	13 Oct.	Considers the Martini-Henry rifle a very efficient arm, and very desirable for the service. States that all the rifles under trial were left for 21 days without cleaning, during which time 300 rounds were fired from each. They were also exposed by night on the poop of the "Cambridge," and were once used for arming boats. The butt plate of Rifle No. 7 was broken in the point after firing 1,995 rounds.	
90	" -	"	23 Dec.	Encloses a report of the comparative shooting of the Snider and Martini-Henry rifles from 23rd December 1869 to 23rd Dec. 1870, which states that 285 men with Sniders against 85 men with the Martini-Henry shows an average figure of merit of 3099·99 against 3903·36. None of the men were picked, but lots were always drawn for the Martini-Henry's.	
91	Morar -	1/11th	8 Oct.	States that the accuracy of the Martini-Henry is much greater, more especially at the long ranges, than the Enfield rifle, and the allowance for wind much less. There is no tendency to fouling. The breech action is simple and safe, and stands rough usage as well as wear. The pull off is considered too strong in many of the rifles, it varies from 7 to 12 lbs. The ramrod becomes loose after the second or third round. The indicators have not got out of order.	
92	Dum Dum -	96th	11 Aug.	Considers the Martini-Henry a very high-class weapon, and is much approved of by all who have fired it. Thinks that the heavy charge and sharp twist may account for the severe recoil which may however be the fault of the firer. The barrel is considered too long. The lock bolt is useless and objectionable and the ball bags bad.	
93	Umballa -	106th	27 Sept.	In consequence of the number of miss-fires, the trials with rifles No. 140, 142, and 146 were suspended. Thinks that after a little practice the men will look to the indicator as they now do to the hammer. The total number of miss-fires were 377, 349 being due to the arm and 28 to bad cartridges. States that the rifles have been submitted to a more severe test than is likely they would ever undergo during any campaign. They have fired 1,000 rounds each without being cleaned, but with an increase of recoil. Considers the Martini-Henry a strong, serviceable, and most efficient weapon. The art of locking by means of the bolt in a little time came so natural to the men that it was involuntary.	

General Observations—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
94	Simla - -	Chief Inspector of Musketry.	1870. 16 Oct.	States that all the miss-fires exploded on a second trial. The barrel and breech action are now in as perfect order as when the trial commenced. The barrel heats very much after firing 25 to 30 rounds quickly, but to a less extent than the Snider. States that after an exhaustive trial of three months, in regard to accuracy, rapidity of the bullet's flight, and power of sustaining that rapidity to long ranges, in simplicity of the breech mechanism, its quickness and ease of manipulation, its strength and safety, its extreme non-liability to get out of order from climate or other influences, the Martini-Henry is a military rifle of the highest class, a weapon of terrible efficiency and one compared with which the Snider is a mere toy.	
95	Poona - -	1/2nd	13 Oct.	States that the general result is highly satisfactory; the accuracy of the rifle as to shooting is perfect; the simplicity and strength of the breech action is incomparably superior to any other he has seen; it has received rough handling without in the slightest degree affecting its efficiency, not one rifle has ever been out of order, and they are as efficient as when first received. Recommends the heel plate be made ½-inch longer to fit the shoulder, and that the cleaning rods be better secured to prevent their working loose.	
96	Kurrachee -	66th	26 Oct.	The Martini-Henry has been found more accurate than the Snider at the long ranges, although heavier, and with sword-bayonets top-heavy. The ball bags are not found convenient, the leather shrinks and ball bags without fittings for each cartridge would be more convenient.	
97	Dugshaie -	1/3rd	11 Oct.	States that there was a slight increase in the per-centage of miss-fires when the ammunition was carried in the men's pouches. Recommends some protection for the hand from the heat of the barrel after rapid firing. States that the bolt action is a far greater security than the old half-cock.	
98	Rawul Pindee -	36th	10 Nov.	Remarks that the arms have not suffered from climatic influences.	
99	Lucknow -	62nd	17 Oct.	States that the thumb of the right hand is liable to get in the line of sight at short distances. Owing to the form of lever, the grasp of the rifle is inconvenient when taking aim. The shooting of the rifle was very accurate.	
100	Cork - -	District Inspector of Musketry.	15 July	Considers the Martini-Henry in every way, and particularly as to accuracy of fire and flatness of trajectory, superior to the Snider. The ammunition is good, but owing to its length liable to become bent, but not so as to affect the loading. Attributes the breaking of two of the strikers to too much snapping.	

General Observations—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answer.	Remarks of Committee.
101	Cork - -	District Inspector of Musketry.	1870. 26 July	The same.	
102	,,	,,	18 Aug.	The same.	
103	Quebec -	,,	12 Sept.	Forwards a report of the shooting with the Martini-Henry rifle by five of the musketry staff of the 69th regiment. The figure of merit in firing through the course was 190·88, which, considering that 4,550 rounds had been previously fired from each gun, exhibits in a marked manner the excellence of the arm both for precision and durability.	
104	Dum Dum -	,,	13 Aug.	States that all iron and steel rust very quickly in the Bengal rainy season, during which these arms have been tried, and the test on this point has doubtless been severe; the breech-block can, however, be so easily taken to pieces, that accumulation of rust to any extent can be prevented. The coil springs were originally weak, and have been replaced by stronger ones; the miss-fires have consequently ceased. The re-introduction of the muzzle-stopper was advocated to protect the barrel and action in the barrack-room and on parade. The recoil is greater than that of the Snider or muzzle-loading Enfield, but only slightly so, and is due to the increased charge and severe twist in rifling; attaches no importance to it in comparison with the other advantages of the rifle, such as flatness of trajectory, accuracy, range, and penetration, and thinks it partly the firer's fault. Recommends that the barrel be shortened by 3 or 4 inches, as it would be lighter, better balanced, and the accuracy equal, if not better, although the weapon as a pike would be slightly inferior. Considers the form of back-sight to be very good for accuracy of aim, and believes it would be approved of by the men after a little practice. Thinks the locking-bolt might be done away with, its use being questionable.	
105	Lucknow -	Inspector of Musketry.	21 Nov.	Considers that the very complicated nature of the breech-action is a disadvantage for a military weapon. The coil-spring, whether from weakness or rust, was the cause of many miss-fires. The cartridge seems to be very liable to injury, should think that the bottle-shaped cartridge would be easier and stronger to carry. The stock does not fit the shoulder so well as that of the Snider, and the pull-off of the trigger is very harsh. The rifle was found very accurate, and being so little affected by wind, made very good practice at long ranges.	

REPORT on the Defects and Irregularities in 65 long-action Martini-Henry Rifles returned to R. S. A. Factory, and enumerated in the Reports of Officers of the various Regiments, and in Committee's Letter October 21st 1870, and on the appearance of the Arms, together with General Observations on their condition, and suggestions on points which appear to call for special remarks.

Questions addressed.	No. of Regiment.	Reply.	Remarks.
Accidents.	1st Battalion, 25th Regiment	No. 9 rifle fired whilst closing the breech.	The trigger must have been pulled at the same time.
	77th Regiment	No. 5 went off twice without a finger near the trigger.	The armourer is reported to have dismounted these rifles, and omitted in assembling No. 5 to place the rest spring under tumbler rest, which in consequence did not act.
Difficulty of extraction.	42nd	No. 8 and 68 rifles extracted badly.	These two rifles were fired by Col. Fletcher at the R. S. A. Factory, and no difficulty could be observed in extraction.
	2nd /2		
	69th	No. 100 rifle - - -	This rifle has not arrived from Quebec.
Security of stock, and shrinkage of wood.		Rifle No. 78 and 4 have been screwed up by armourer.	These two rifles were badly fitted in the first instance.
Introduction of muzzle stoppers.	2nd Battalion, S. F. Gds.	No. 126 and 89 rifles have been injured by firing them with stopper in.	These barrels are bulged at the muzzle.
General observations on certain arms.	2nd Battalion, S. F. Gds.	No. 193 the extractor is reported "Catch on face of block in closing."	Caused by a slight irregularity in workmanship, but it ultimately righted itself.
	1st /22	Report fouling to have accumulated about extractor.	Require cleaning.
	2nd /2	Nos. 6, 7, 8, 9, 10 or 87, 194, 2, 161, 36 "pull-off" of trigger is very irregular. Think the chamber of barrel is worn large, considerable amount of play is observable in the lever of these rifles "probably worn."	The introduction of the stronger spring would affect the pull-off in some rifles, owing to their being hand made. Cannot detect any difference in the size of the chamber. There is no wear observable on the surface of the lever or block, and the play of lever is part of the arrangement of action.
		Rifle No. 4 cleaning rod screw too far through.	Error in manufacture.
		Rifle No. 102 pulled off at 12 lbs.	Caused through the locking bolt being made so thin that it could be shot under the rest when fired, which was done, and then the lever being forcibly wrenched open, the rest could not recede, through the bolt being under it. The act of forcing the tumbler up the face of the rest has thrown a heavy burr $\frac{1}{64}$ high on the top edge of the bearing surface of the rest and tumbler, and the two form like a hook one upon the other, causing the increase of the "pull-off."

GENERAL OBSERVATIONS.

The condition of the arms generally is satisfactory, both in respect of the wear and tear, as well as in not exhibiting anything which may be considered as a fault in construction.

I think that the principal objections generally made, viz., the want of uniformity in the pull-off, can be remedied. It would be better, in order to do this with the best likelihood of a good result, to alter slightly the size of the axis trigger pin, viz., from No. 6 to No. 5 wire, and to screw the point; this will oblige it to have a head. The pin at present is likely to fall out and be lost.

I would recommend that the trap in the butt be discontinued, and the hole in the stock left as small as possible.

From recent experiments I have made, it would seem that the stock bolt should be of soft steel or of iron instead of steel hardened and tempered, and it should also be longer.

I would recommend that the guard and trigger plate, the butt plate, and nose cap should be made of brass.

There is no reason why they should necessarily be made of iron, and on the other hand, it will make a great difference in simplicity and cheapness of manufacture, to make them of brass.

If the cleaning rod was lengthened so that the head stood level with the muzzle of barrel (when screwed home), and the soldier instructed to pass the rod gently down the groove before screwing it home, it is not likely that the rod would become loose through the recoil. The rod might be squared under the head also, and thus give a better purchase for unscrewing and screwing in.

In all other respects the actions of the rifles are very good, showing no wear, although some have been very badly used. Some defects have become apparent owing to hand work and want of gauges, &c. These would not be found in machine made guns.

The barrels show no perceptible wear as the rejecting plug will not enter.

Three of the back-sights had become unsoldered, owing to the firing of 140 rounds at one time, the liability of the sights becoming loose through rapid firing can be avoided by screwing them on the barrel, in addition to the soldering process.

The coil springs show no loss of strength, as they are the same length when out of the block as when first supplied, and sustain the proper weight at the position of full cock and bearer.

W. M. H. DIXON,
Colonel and Superintendent.

R. S. A. F., Enfield,
30/12/70.

APPENDIX B.

Reports from Regiments on the Short-action Martini-Henry Rifles.

Question 1.—What accidents, if any, have occurred?

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
1	Aldershot -	2/22nd	11 Nov.	None.	With reference to the accidents, the Committee would remark, that none appear to have occurred which can be attributed to any peculiarity in the construction of the Martini breech mechanism.
2	„ -	2/9th	31 Oct.	None.	
3	„ -	1/4th	9 Nov.	None.	
4	„ -	2/17th	19 Dec.	None.	
5	„ -	33rd	9 „	A rifle went off accidentally whilst at practice, the man not being accustomed to a self-cocking rifle.	
6	„ -	91st	21 Dec.	The extractor of rifle No. 10 was broken at practice. On examination there was found to be a flaw in the metal.	
7	Hythe - -	S. of M.	14 Nov.	None.	
8	Curragh -	44th	27 Oct.	None.	
9	„ -	56th	25 Nov.	The muzzle of rifle No. 6 was bulged when received from the 44th Regiment.	
10	Portsmouth -	R. M. L. I.	4 „	None.	
11	„ -	R. M. A.	1 Dec.	None.	
12	„ -	82nd	7 Jan./71	A coil spring has been broken.	

Question 2.—What difficulties, if any, have been found in loading?

1	Aldershot -	2/22nd	11 Nov.	One cartridge in loading rifle No. 6 was caught on the disc by the breech block; states that it was the fault of the cartridge.	Difficulties that were experienced in loading with the long cartridge, appear to have ceased with the short chamber, and consequently shorter cartridge.
2	„ -	2/9th	31 Oct.	None.	
3	„ -	1/4th	9 Nov.	None.	
4	„ -	2/17th	19 Dec.	None.	
5	„ -	33rd	9 „	None.	
6	„ -	91st	21 „	None.	
7	Hythe - -	S. of M.	14 Nov.	None.	
8	Curragh -	44th	27 Oct.	None.	
9	„ -	56th	25 Nov.	None.	
10	Portsmouth -	R. M. L. I.	4 „	None. The difficulties which occurred with the paper covered cartridges have been entirely got rid of by the substitution of the bottle cartridge.	
11	„ -	R. M. A.	1 Dec.	None.	
12	„ -	82nd	7 Jan./71	None.	

Question 3.—What difficulties, if any, have been found in extracting cartridge cases?

1	Aldershot -	2/22nd	11 Nov.	None.	It appears from the reports that although the extraction of the shorter cartridge is not quite so free as that of the long, yet that it is sufficiently so; and the Committee believe that any difficulty on this subject will be found to disappear as men become experienced in the use of the arm.
2	„ -	2/9th	31 Oct.	None.	
3	„ -	1/4th	9 Nov.	None, unless in the hands of awkward men, who have great difficulty in giving sufficient jerk to the lever to throw the cartridge completely out; in this case the block must again be closed, which is difficult after a cartridge has been fired and partially extracted.	
4	„ -	2/17th	19 Dec.	None.	
5	„ -	33rd	9 „	None.	

Question 3.—What difficulties, if any, have been found in extracting cartridge cases?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
6	Aldershot -	91st	21 Dec.	None.	
7	Hythe -	S. of M.	14 Nov.	None.	
8	Curragh -	44th	27 Oct.	One cartridge case, being a little bigger in circumference than usual, required a certain amount of force to extract.	
9	" -	56th	25 Nov.	In one instance there was slight difficulty in extracting a cartridge case from rifle No. 8.	
10	Portsmouth -	R. M. L. I.	4 "	The extraction of the empty cases after firing is neither so easy or certain as with the first pattern rifles, a sharp forcible jerk of the lever is required, and in some cases it has had to be repeated several times. This difficulty appears to occur from the tight fitting of the cartridge after firing, and is not the fault of the extractor. Two cartridges were difficult to extract, owing probably to some fault in the case.	
11	" -	R. M. A.	1 Dec.	There was slight difficulty when sufficient energy was not used.	
12	" -	82nd	7 Jan./71	None.	

Question 4.—Has the lever in any case been broken, or so bent as to impede its action?

1	Aldershot -	2/22nd	11 Nov.	No.	With reference to the observations in the report of the R. M. L. Infantry the Committee have recommended that the sharp edges in all parts of the arm should as far as possible be rounded off.
2	" -	2/9th	31 Oct.	No.	
3	" -	1/4th	9 Nov.	No.	
4	" -	2/17th	19 Dec.	No.	
5	" -	33rd	9 "	No.	
6	" -	91st	21 "	No. Its action in all cases perfect.	
7	Hythe - -	S. of M.	14 Nov.	No.	
8	Curragh -	44th	27 Oct.	No.	
9	" -	56th	25 Nov.	No.	
10	Portsmouth -	R. M. L. I.	4 "	No, but recommends that the sharp edges of the lever catch should be rounded off.	
11	" -	R. M. A.	1 Dec.	No.	
12	" -	82nd	7 Jan./71	No.	

Question 5.—Has rust been found to accumulate about the breech so as to affect its working?

1	Aldershot -	2/22nd	11 Nov.	No.	The Committee observe that in the course of trial at Hythe the striker of rifle No. 3 was found on one occasion to be fixed by rust. This rifle has been forwarded to Enfield for examination by the Superintendent R. S. A. Factories, together with some remarks on the subject by the Inspector General of Musketry. One report mentions that rust has been found on the coil spring and that this coil spring was broken. There is no evidence to show how the spring was broken, and this is the only instance, in all the trials of the long and short actioned arms, of rust having reached the coil spring.
2	" -	2/9th	31 Oct.	No; but dust and dirt have accumulated, which would, it is thought, interfere with the working of the action.	
3	" -	1/4th	9 Nov.	No.	
4	" -	2/17th	19 Dec.	No.	
5	" -	33rd	9 "	No.	
6	" -	91st	21 "	No.	
7	Hythe - -	S. of M.	14 Nov.	Rifle No. 3 was accidentally left at full cock, when required the striker was found firmly rusted in the block, so that the lever could not be moved down. This rifle had not been exposed to any bad weather, neither had it been cleaned with water.	
8	Curragh -	44th	27 Oct.	No.	
9	" -	56th	25 Nov.	Yes, once with rifle No. 3.	
10	Portsmouth -	R. M. L. I.	4 "	No. These rifles have been exposed to exceptionally bad weather and constant damp for a month, the breech actions were not dismounted and only cleaned by rubbing with an oil rag; they remained in perfect working order throughout.	

Question 5.—Has rust been found to accumulate about the breech so as to affect its working ?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
11	Portsmouth -	R. M. A.	1 Dec.	No.	
12	„ -	82nd	7 Jan./71	When the lock with the broken coil spring was taken to pieces rust was found to have accumulated in the lock on the spring and various parts of the lock.	

Question 6.—Has the coil spring been found to become weak or inefficient ?

1	Aldershot -	2/22nd	11 Nov.	No.	There appears no evidence that the springs have become weak or inefficient from use. On this subject the Committee would point out that the results of the practical tests to which the arm has been subjected, as well as the evidence which they have received from mechanical engineers and others, lead to the conclusion that the spiral spring in the Martini breech action is well adapted in all climates to perform with efficiency the work for which it is intended.
2	„ -	2/9th	31 Oct.	No.	
3	„ -	1/4th	9 Nov.	No.	
4	„ -	2/17th	19 Dec.	No.	
5	„ -	33rd	9 „	No.	
6	„ -	91st	21 „	No.	
7	Hythe - -	S. of M.	14 Nov.	No.	
8	Curragh -	44th	27 Oct.	The spring of rifle No. 3. was evidently weak, as there were mis-fires, but were fired on the second trial.	
9	„ -	56th	25 Nov.	No.	
10	Portsmouth -	R. M. L. I.	4 „	No.	
11	„ -	R. M. A.	1 Dec.	No.	
12	„ -	82nd	7 Jan./71	No.	

Question 7.—Is the action of the extractor in throwing out the empty cartridge case considered too sudden ?

1	Aldershot -	2/22nd	11 Nov.	No. In some instances the empty cartridge case has not been thrown out with sufficient force.	The Committee have no remarks to make on this subject, which has already been treated under the head of question No. 3.
2	„ -	2/9th	31 Oct.	No.	
3	„ -	1/4th	9 Nov.	No.	
4	„ -	2/17th	19 Dec.	No.	
5	„ -	33rd	9 „	No.	
6	„ -	91st	21 Dec.	No.	
7	Hythe - -	S. of M.	14 Nov.	No.	
8	Curragh -	44th	27 Oct.	No.	
9	„ -	56th	25 Nov.	No.	
10	Portsmouth -	R. M. L. I.	4 „	No.	
11	„ -	R. M. A.	1 Dec.	No.	
12	„ -	82nd	7 Jan./71	No.	

Question 8.—The stock being in two parts, has it remained firm and strong ?

1	Aldershot -	2/22nd	11 Nov.	Yes.	The Committee would point out that the evidence on this point is satisfactory. The results of experiments made to test the relative strengths of whole and divided stocks show that divided stocks are equally strong as whole stocks.
2	„ -	2/9th	31 Oct.	Yes.	
3	„ -	1/4th	9 Nov.	Yes.	
4	„ -	2/17th	19 Dec.	Yes.	
5	„ -	33rd	9 Dec.	Yes.	
6	„ -	91st	21 Dec.	Yes.	
7	Hythe - -	S. of M.	14 Nov.	Yes.	
8	Curragh -	44th	27 Oct.	Yes.	
9	„ -	56th	25 Nov.	Yes.	
10	Portsmouth -	R. M. L. I.	4 Nov.	Yes.	
11	„ -	R. M. A.	1 Dec.	Yes.	
12	„ -	82nd	7 Jan./71	Yes.	

Question 9.—Has the butt end been found to shrink or become loose from the effect of hot dry temperatures ?

1	Aldershot -	2/22nd	11 Nov.	No.	None required
2	„ -	2/9th	31 Oct.	No.	
3	„ -	1/4th	9 Nov.	No hot weather.	
4	„ -	2/17th	19 Dec.	No hot weather.	
5	„ -	33rd	9 Dec.	No hot weather.	
6	„ -	91st	21 Dec.	No.	
7	Hythe - -	S. of M.	14 Nov.	No.	
8	Curragh -	44th	27 Oct.	No hot weather.	
9	„ -	56th	25 Nov.	No hot weather.	
10	Portsmouth -	R. M. L. I.	4 Nov.	No.	
11	„ -	R. M. A.	1 Dec.	No.	
12	„ -	82nd	7 Jan./71	No.	

Question 10.—Is any inconvenience experienced from recoil?

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
1	Aldershot -	2/22nd	11 Nov.	No. Decidedly less than that of the Snider.	The majority of the reports state that the recoil is not excessive.
2	„ -	2/9th	31 Oct.	Thinks the recoil is excessive, attributes it to the straightness of the stock.	
3	„ -	1/4th	9 Nov.	Not more than the Snider.	
4	„ -	2/17th	19 Dec.	There is a perceptible increase of recoil compared with the Snider, but does not consider it an objection.	
5	„ -	33rd	9 Dec.	A little greater than the Snider.	
6	„ -	91st	21 „	No.	
7	Hythe - -	S. of M.	14 Nov.	No.	
8	Curragh -	44th	27 Oct.	The recoil is a little stronger and the tendency of the muzzle to throw up greater than the Snider, but the inconvenience is slight.	
9	„ -	56th	25 Nov.	No.	
10	Portsmouth -	R. M. L. I.	4 „	No. The difference between the M. H. and the Snider is scarcely worth mentioning.	
11	„ -	R. M. A.	1 Dec.	No, except by a few nervous men who showed a disinclination to hold the rifle firmly.	
12	„ -	82nd	7 Jan./71	Thinks it greater than that of the Snider.	

Question 11.—Is the weight of the arm a practical objection on service?

1	Aldershot -	2/22nd	11 Nov.	It is considered so when the arm carried at the trail.	The majority of the answers state that the weight of the arm is not a practical objection, but the Committee have ascertained by trial that the barrel of the long rifle may advantageously be lightened by 6 ounces, thus making the rifle at least as light as the Snider. The shorter arm of the Rifle Brigade pattern has been proportionately lightened, and may possibly be still further reduced in weight. (*Vide* body of the Report, page 5.)
2	„ -	2/9th	31 Oct.	No; but recommends that the weight be reduced.	
3	„ -	1/4th	9 Nov.	Yes.	
4	„ -	2/17th	19 Dec.	No.	
5	„ -	33rd	9 „	Several men have complained of the weight.	
6	„ -	91st	21 Dec.	No.	
7	Hythe -	S. of M.	14 Nov.	No.	
8	Curragh -	44th	27 Oct.	No.	
9	„ -	56th	25 Nov.	No.	
10	Portsmouth -	R. M. L. I.	4 „	No.	
11	„ -	R. M. A.	1 Dec.	Considers it too heavy for firing standing, but not for carrying on the march.	
12	„ -	82nd	7 Jan./71	Thinks the weight will make a material difference on a long march and in bayonet exercise.	

Question 12.—Is the position of the back-sight approved of?

1	Aldershot -	2/22nd	11 Nov.	It is very inconvenient when the arm is held at the present, more particularly at long range shooting; suggests that it should be moved 4 inches back. Prefers the V shape to the straight bar and lines, as it is difficult to see the lines when the sun is shining from the front.	The position of the back-sight is generally approved of for aiming, but it is found inconvenient when the arm is held at the trail. This inconvenience is, in a great measure, removed in the altered balance of the lightened arm. With regard to the shape of the back sight the balance of evidence is in favour of the flat sliding bar, but in some instances the old V shape is preferred. This question has been dealt with in Appendix C., page 52.
2	„ -	2/9th	31 Oct.	Prefers the straight bar for target practise, but for general use considers the V shape far more preferable.	
3	„ -	1/4th	9 Nov.	It is very inconvenient for trailing arms or shouldering from the order. Recommends the flap being reversed. The straight bar and lines much preferred to the V shape.	

Question 12.—Is the position of the back-sight approved of?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
4	Aldershot -	2/17th	9 Dec.	Yes, for shooting; but inconvenient for trailing arms. Thinks that a slight notch or groove in the straight bar would be an improvement, as it has been found difficult to take accurate aim in certain lights. The wind gauges could not then be mistaken for the true sights.	
5	„ -	33rd	9 „	Inconvenient for trailing arms. The centre line is not considered bright enough unless there is a strong light in rear.	
6	„ -	91st	21 „	Slightly inconvenient for trailing arms.	
7	Hythe -	S. of M.	14 Nov.	Yes, for aiming; but it is inconvenient when the arm is carried at the trail. Does not think the straight bar is adapted for general use as the lines cannot be easily seen when the sun is shining and they appear to the soldier to be blurred, so that they cannot tell when they have the fore sight in line. When the rifles have been exposed to the weather the lines have become very indistinct. Thinks the wind gauges too far from the centre line to be of any use.	
8	Curragh -	44th	27 Oct.	Inconvenient for trailing arms. The straight bar is generally liked, but the platinum lines are not considered bright enough.	
9	„ -	56th	25 Nov.	Yes. The straight bar is a great improvement on the V shaped sight. The lines on the sight should be made broader, and of platinum.	
10	Portsmouth -	R. M. L. I.	4 „	Yes. The straight bar back-sight is an immense improvement, adding vastly to the ease, quickness, clearness, and accuracy of aim. The lines are easily used for allowance for wind. This report enters fully into the reasons for preferring the straight bar to the V shaped bar.	
11	„ -	R. M. A.	1 Dec.	Yes; but does not approve of the straight bar for platoon firing or where men are liable to feel hurried or confused.	
12	„ -	82nd	7 Jan./71	No; very inconvenient for trailing arms; recommends it be moved further back.	

Question 13.—How does the sword bayonet answer as a weapon for attack and defence?

1	Aldershot -	2/22nd	11 Nov.	Very well, but recommends that the edges on the handle be rounded off.	On the whole the majority of the reports are in favour of the saw-backed sword bayonets, although some state that the weight of the arm when the sword is fixed is too great. Three of the reports mention favourably the new pattern Elcho sword bayonet.
2	„ -	2/9th	31 Oct.	Considers it too heavy to be of service when used as a bayonet; and awkward when firing.	
3	„ -	1/4th	9 Nov.	Considers it too heavy and unwieldy when fixed.	
4	„ -	2/17th	19 Dec.	The Elcho sword bayonet is superior to the old bayonet, but its weight is a drawback.	
5	„ -	33rd	9 „	When the bayonet is fixed the weapon is too heavy for use, and also top heavy.	

Question 13.—How does the sword bayonet answer as a weapon for attack and defence?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
6	Aldershot -	91st	21 Dec.	The Elcho sword bayonet answers well, combines strength, which is an advantage for cutting and thrusting, and is a very formidable weapon. Recommends that the end of the hilt should have a slight curve on the same side as the edge of the blade.	
7	Hythe -	S. of M.	14 Nov.	The Elcho sword bayonet appears an efficient weapon, but the knob of the spring of new pattern handle might be reduced, being in the way of the grip, also the sharp edges might be rounded off.	
8	Curragh -	44th	27 Oct.	It seems a formidable weapon, and very strong.	
9	„ -	56th	25 Nov.	It appears to be a most formidable weapon.	
10	Portsmouth -	R. M. L. I.	4 „	Very well, but they are not of the Elcho pattern.	
11	„ -	R. M. Arty.	1 Dec.	Considers it too slight.	
12	„ -	82nd	7 Jan./71	Does not consider it could be used with as great dexterity as the present one, owing to the weight of the rifle and bayonet.	

Question 14.—Does it answer as an implement, on service, for cutting wood, &c.?

1	Aldershot -	2/22nd	11 Nov.	A piece of seasoned fir 4¾ by 3½ inches was sawn through in less than five minutes.	The balance of opinion is decidedly in favour of the saw. One regiment remarks that it would not answer for this purpose when fixed on the rifle. In answer to this the Committee observe that it was not intended to be used as a wood-cutter when fixed.
2	„ -	2/9th	31 Oct.	Yes.	
3	„ -	1/4th	9 Nov.	Yes, provided it could be kept in a serviceable condition.	
4	„ -	2/17th.	19 Dec.	To a certain extent it might, but not when fixed on the rifle.	
5	„ -	33rd	9 „	Yes.	
6	„ -	91st	21 „	Thinks it would answer.	
7	Hythe -	S. of M.	14 Nov.	Yes.	
8	Curragh -	44th	27 Oct.	Yes. A piece of wood 6 inches square was sawn through quite easily. A bone was also sawn through. The ration meat was cut with the blade, which answered very well. Recommends that the teeth of the saw should point both ways.	
9	„ -	56th	25 Nov.	Yes, very well.	
10	Portsmouth -	R. M. L. I.	4 „	Yes.	
11	„ -	R. M. A.	1 Dec.	Not been tested.	
12	„ -	82nd	7 Jan./71	Yes. Admirably for cutting meat, &c.	

Question 15.—Are the cleaning implements (the jag and protector) found useful?

1	Aldershot -	2/22nd	11 Nov.	Yes.	It is quite clear from these reports that the jag and protector are useful. Two reports state that the protectors are too brittle, the expense of these protectors is so small that if they should break they could readily be replaced.
2	„ -	2/9th	31 Oct.	Yes.	
3	„ -	1/4th	9 Nov.	Yes, but the "protector" is apt to split easily.	
4	„ -	2/17th	19 Dec.	Yes, exceedingly; but the material of the protector is too brittle.	
5	„ -	33rd	9 „	Yes.	
6	„ -	91st	21 „	Yes.	
7	Hythe -	S. of M.	14 Nov.	Yes.	
8	Curragh -	44th	27 Oct.	Yes.	
9	„ -	56th	25 Nov.	Yes.	
10	Portsmouth -	R. M. L. I.	4 „	Yes, decidedly.	
11	„ -	R. M. A.	1 Dec.	Yes.	
12	„ -	82nd	7 Jan./71	Yes.	

Question 16.—Is the muzzle stopper found generally useful, and is it desirable to introduce it?

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
1	Aldershot -	2/22nd	11 Nov.	Yes.	The Committee consider that either a muzzle stopper or muzzle cover are desirable. Should the muzzle cover recommended for the Snider prove serviceable, it could be also used for the Martini-Henry.
2	" -	2/9th	31 Oct.	Yes; more especially the protector as keeping the foresight from damage.	
3	" -	1/4th	9 Nov.	Yes.	
4	" -	2/17th	19 Dec.	Decidedly.	
5	" -	33rd	9 "	It is useful to keep out wet and protect the sight, but objectionable as liable to cause accidents.	
6	" -	91st	21 "	Yes; and recommends its adoption.	
7	Hythe - -	S. of M.	14 Nov.	Yes.	
8	Curragh -	44th	27 Oct.	Yes. The rifle cannot be fired without seeing the stopper, so reducing the danger to a minimum. The fact of its covering the sight is greatly in its favour.	
9	" -	56th	25 Nov.	Yes.	
10	Portsmouth -	R. M. L. I.	4 "	No.	
11	" -	R. M. A.	1 Dec.	The guard to the foresight is most useful, but a stopper is considered dangerous.	
12	" -	82nd	7 Jan./71	Yes; and is a capital guard for the foresight.	

Question 17.—Has the ammunition been found liable to become broken or damaged in transport, or when carried in men's pouches?

1	Aldershot -	2/22nd	11 Nov.	No.	The evidence on this subject appears satisfactory, though the short cartridge does not seem quite so well adapted to resist immersion in water as the long cartridge with paper cover. Vide Appendix B, page 51.
2	" -	2/9th	31 Oct.	No.	
3	" -	1/4th	9 Nov.	No. But the bullets are too loose, and some have fallen out.	
4	" -	2/17th	19 Dec.	Not more so than that of the Snider.	
5	" -	33rd	9 "	No.	
6	" -	91st	21 "	No, it being shorter and stronger than the long cartridge, is not liable to damage during transport, or being carried in the men's pouches.	
7	Hythe - -	S. of M.	14 Nov.	No.	
8	Curragh -	44th	27 Oct.	Have not been able to judge, but the ammunition seems very strong.	
9	" -	56th	25 Nov.	No. Packets of ammunition that had been carried in the men's pouches for 20 days were found to have sustained no damage.	
10	Portsmouth -	R. M. L. I.	4 "	The brass foil cartridge seems to be more susceptible of injury than the paper covered cartridges previously tried. With a little rough usage the seam or fold of the outer metal coil begins to gape; wet reaches the powder much more readily than it did with the other pattern.	
11	" -	R. M. A.	1 Dec.	It has been but little tested.	
12	" -	82nd	7 Jan./71	No.	

Question 18.—Has any difficulty arisen from this cause in loading or extracting?

1	Aldershot -	2/22nd	11 Nov.	None, except in one instance. (*Vide* answer to Question No. 2.)	No difficulty appears to have been found.
2	" -	2/9th	31 Oct.	No.	
3	" -	1/4th	9 Nov.	No.	
4	" -	2/17th	19 Dec.	No.	
5	" -	33rd	9 "	No.	
6	" -	91st	21 "	No.	
7	Hythe -	S. of M.	14 Nov.	No.	

Question 18.—Has any difficulty arisen from this cause in loading or extracting?—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
			1870.		
8	Curragh -	44th	27 Oct.	No.	
9	„ -	56th	25 Nov.	No.	
10	Portsmouth -	R. M. L. I.	4 „	No. The cartridges can be easily inserted, even when they have been purposely battered about to test them.	
11	„ -	R. M. A.	1 Dec.	No.	
12	„ -	82d	7 Jan./71	No. Considers the short cartridge a great improvement, both in loading and extracting.	

Question 19.—Is the form of the cartridge found convenient to use?

1	Aldershot -	2/22d	11 Nov.	Yes.	The short cartridge appears unanimously preferred to the long one.
2	„ -	2/9th	31 Oct.	Yes, it is preferred greatly to the long cartridge.	
3	„ -	1/4th	9 Nov.	Yes.	
4	„ -	2/17th	19 Dec.	Yes.	
5	„ -	33d	9 „	Yes.	
6	„ -	91st	21 „	Yes, particularly so.	
7	Hythe - -	S. of M.	14 Nov.	Yes. Preferred to the long cartridge as it enters the chamber much more easily and is not liable to catch by the brown paper.	
8	Curragh -	44th	27 Oct.	Yes. Being shorter than the old cartridge it is not so liable to become damaged.	
9	„ -	56th	25 Nov.	Yes. It is a great improvement on the long cartridge and considers it perfect.	
10	Portsmouth -	R. M. L. I.	4 „	Yes. It is infinitely more convenient both to use and carry than the previous long pattern.	
11	„ -	R. M. A.	1 Dec.	Yes.	
12	„ -	82d	7 Jan./71	Yes, much more so than the longer one.	

Question 20.—Have any of the cartridges cut round the base?

1	Aldershot -	2/22nd	11 Nov.	No.	On this point the evidence is very satisfactory.
2	„ -	2/9th	31 Oct.	No.	
3	„ -	1/4th	9 Nov.	No.	
4	„ -	2/17th	19 Dec.	No.	
5	„ -	33rd	9 „	No.	
6	„ -	91st	21 „	No.	
7	Hythe - -	S. of M.	14 Nov.	No.	
8	Curragh -	44th	27 Oct.	No.	
9	„ -	56th	25 Nov.	No.	
10	Portsmouth -	R. M. L. I.	4 „	Yes. In one instance the extractor brought away the head, the cylinder remained firmly adhesive to the chamber and was removed with difficulty with the cleaning rod.	
11	„ -	R. M. A.	1 Dec.	No.	
12	„ -	82nd	7 Jan./71	No.	

Question 21.—Have any of the caps given way?

1	Aldershot -	2/22nd	11 Nov.	No.	On this point the evidence is most satisfactory.
2	„ -	2/9th	31 Oct.	No.	
3	„ -	1/4th	9 Nov.	No.	
4	„ -	2/17th	19 Dec.	No.	
5	„ -	33rd	9 „	No.	
6	„ -	91st	21 „	No.	
7	Hythe - -	S. of M.	14 Nov.	No.	
8	Curragh -	44th	27 Oct.	No.	
9	„ -	56th	25 Nov.	No.	
10	Portsmouth -	R. M. L. I.	4 „	No.	
11	„ -	R. M. A.	1 Dec.	No.	
12	„ -	82nd	7 Jan./71	No.	

General Observations.

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
1	Aldershot -	2/22d	1870. 11 Nov.	Recommends that the stock should have more swell where grasped by the left hand, and also that a felt band covered with wood be placed over the barrel to protect the fingers from the heat of the barrel. During the last few days' firing there appeared a great escape of gas at the breech.	The Committee observe that the general observations in the reports from regiments and districts are extremely favourable to the arms and ammunition in the most important respects. Criticisms which have not been dealt with in the answers to the 21 questions may be grouped under the following heads, which will be considered seriatim. I.—Miss-fires. Springs of suitable and sufficient strength having been substituted for the weak springs first issued with the arms, miss-fires have practically ceased. II.—Breech Mechanism. (*a*). *Observations on the safety of the arm.* One regiment recommends that a mark be placed upon the lock plate, to show which way the indicator points when the arm is at full cock, to obviate the danger of an accident in the hands of a careless soldier. The Committee would observe that when the arm is at full cock the indicator points towards the breech axis pin, therefore it is readily distinguishable not only by sight but by touch. (*b*). *Trigger wire liable to work out.* The attention of the Superintendent Royal Small Arms Factory has been called to this. A strong screw will be used in place of the pin. (*c*). *Escape of gas at the breech.* In the Report from the 2/22d Regiment it is stated that "a great escape of gas at "the breech was remarked "during the last few days "firing." The Committee observe that in the Report from the 2/17th Regiment which subsequently used these arms, no mention is made of any escape of gas. Since the arms have been returned to the Royal Small Arms Factories, Enfield, they have been examined and fired by the Committee; no escape of gas was perceptible, and they cannot but think that there must be some misconception on this subject. III.—Stock. With reference to the suggestions in some of the reports, the Committee have made
2	" -	2/9th	31 Oct.	Recommends that the stocks be made of various angles, the present stock being too straight, and that the fore and back sights be raised on a higher block. States that as the trigger wire is liable to work out, a screw or something immoveable would be better. Recommends the moveable nut, for the socket for cleaning rod, as in Snider, be used, owing to the screw being liable to damage. States that the rifles became extremely hot after firing 10 to 20 rounds rapidly.	
3	" -	1/4th	9 Nov.	States that the accuracy of the shooting has been highly satisfactory at all ranges, and the superiority over the Snider at ranges over 500 yards has been very great. The men have understood the wind gauges and used them efficiently. The rapid firing has been very successful, but considers that great care should be used to prevent the men from firing away their ammunition too rapidly.	
4	Aldershot -	2/17th	19 Dec.	States that men unaccustomed to the M.-H. Rifle were able to obtain double the rapidity with a corresponding degree of accuracy as compared with their present weapon in the independent firing up to 400 yards. The barrel becomes inconveniently hot after firing 20 rounds rapidly; but no escape of gas at the breech has been observed. No miss-fire or sticking of cartridges have occurred, nor has the breech action or lever got out of order. The weight of the Elcho bayonet is objected to when fixed on the rifle, and a general wish is expressed for a lighter one of the same description. The position of the lever when the rifle is used as a weapon of attack or defence is found by some to be slightly inconvenient.	
5	" -	33rd	9 "	The weather has not been favourable for shooting. The results in many cases are very satisfactory; the action is simple and the arm easily kept in a serviceable condition.	
6	" -	91st	21 "	States that the accuracy of the M.-H. Rifle is placed beyond doubt; as the practice daily made, very much exceeded anything done by the Snider in the same hands. Although the wind was blowing strong during the trials there were very few misses, and very little allow-	

General Observations—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
	Aldershot -	91st—*continued.*	1870. 21 Dec.	ance for wind had to be made. No miss-fires occurred although the rifles were exposed to rain and seldom cleaned. Prefers the short-action rifle to the long one. Objects to the arm as a military weapon on account of the danger of its going off accidentally in the hands of a careless soldier. Recommends a mark be placed on the lock-plate to show which way the indicator points when the arm is at full cock.	certain alterations which are described in Appendix C., page 52. IV.—Other Objections. (*a.*) *Trap in butt.* The trap in the butt has been done away with. (*b.*) *Cleaning rods liable to work loose.* Some alterations which it is hoped will obviate this defect have been proposed. The shape of the head of the rod has also been altered to make it more convenient to use.—Vide Appendix C., page 52.
7	Hythe - -	S. of M.	14 Nov.	Attributes the miss-fires to the striker of the rifles having been put in upside down.	
8	Curragh -	44th	27 Oct.	Considers the trials very satisfactory. The superiority of the Martini-Henry over the Snider as regards accuracy is apparently great, more especially at the long ranges. The motions of loading and extracting are very simple. Considers the arm a safe one, as a man could easily tell in the dark by the indicator, whether the rifle was at full cock or not.	
9	" -	56th	25 Nov.	None.	
10	Portsmouth -	R. M. L. I.	4 "	States that the general observations in the former reports may be repeated in this. The defects pointed out in former reports were: first, difficulty in loading from the mechanical accuracy of fit of the cartridge and the chamber; second, the failure of the spiral spring and consequent miss-fires. The first of these defects has been entirely overcome, and the short action Martini-Henry Rifle receives the present cartridge as easily and freely as the Snider-Enfield. The second defect has not been observable on the present occasion, as 400 rounds have been fired from each rifle without a miss-fire. States the M.-H. Rifle for ease in manipulation, strength, simplicity, for rapidity and accuracy of fire, length of range, flatness of trajectory power, and penetration, is certainly unrivalled. The cleaning rod is apt to work loose in rapid firing. States that during the present trial heavy gales prevailed almost unceasingly and the wind gauges were used with great success by men who had not seen them before.	
11	Portsmouth -	R. M. A.	1 Dec.	None.	
12	" -	82nd	7 Jan. /71	Considers the Martini-Henry rifle much superior to the Snider, especially as regards accuracy, low trajectory, not being acted upon by the wind, and rapidity of fire.	
13	Dublin -	Inspector of Musketry.	1870. 7 Nov.	States that the shooting at first was not good, as the men had never handled the arm before; but it afterwards improved. The recoil, though somewhat greater than that of the Snider, was found of no inconvenience. The straight bar without the V much approved of, but the platinum lines were not bright enough for dull weather. Thinks	

General Observations—*continued.*

Number of Report.	Station.	Regiment.	Date.	Answers.	Remarks of Committee.
	Dublin -	Inspector of Musketry—*continued.*	1870. 7 Nov.	that if the centre lines were made broader and brighter the sight would be much improved; the lines on each side of the centre will be found very useful in making allowance for wind. The position of the back sight is a little inconvenient for trailing arms. The accuracy of the rifle is great; the action works perfectly; did not observe that the coil spring got weaker, though in one rifle the coil spring being weak at the beginning there were six miss-fires. No difficulty was found in loading or extracting the cartridge case. The ammunition is a great improvement on the old pattern, much more difficult to bend or damage than the long cartridge. The saw-backed sword is a very formidable weapon, and very useful in other ways; but considers the edges too sharp when the weapon is only used as a bayonet. Considers the trials, as far as they have gone, very satisfactory in every respect.	
14	Dublin -	"	30 Nov.	States that as the trials proceeded and the men more accustomed to the arm the shooting improved. Only two miss-fires occurred, the cartridges exploding on a second trial; attributes them to the slight stiffness of the action more than to the weakness of the coil spring. Did not remark any diminution in the strength of the springs. The results of these trials prove that the short-actioned M.-H. rifle is an excellent weapon; the accuracy is very great, the action both in loading and extracting very good indeed, and the new form of back sight very good; but recommends the centre line be made broader and brighter. Recommends a small leather or gutta-percha covering to protect the breech arrangements. The new pattern ammunition is considered excellent.	

EXPERIMENTS carried on by Captain V. D. MAJENDIE, R.A., ASSISTANT SUPERINTENDENT ROYAL LABORATORY, to determine whether the SHORT-CHAMBER CARTRIDGE admits wet more readily than the LONG-CHAMBER CARTRIDGE.

Cartridges under Water.	Number of Minutes.	Long-Chamber Cartridges found		Short-Chamber Cartridges found	
		Wet.	Dry.	Wet.	Dry.
5	15	0	5	0	5
5	30	0	5	1	4
5	45	0	5	3	2
5	60	2	3	2	3
5	75	0	5	1	4
5	90	1	4	0	5
5	105	0	5	3	2
5	120	1	4	1	4
5	135	0	5	0	5
5	150	0	5	2	3

It appears that the short-chamber cartridge does admit wet more readily, but the superiority of the long cartridge is not very considerable, and it is doubtful if it is of much importance, because the test of subjecting cartridges to actual continued immersion is really not a practical one.

What cartridges have to resist is damp, and the following experiment was carried out to test the liability of the short-chamber cartridge to become affected by damp as compared with the long-chamber cartridge. Forty cartridges of each sort were placed in wet saw-dust, so wet that the water could be wrung out of it, for 96 hours. Two targets were then made with each, at 500 yards, and the result was—

	Short-Chamber.	Long-Chamber.
	Inches.	Inches.
1st Target -	13·05	17·98
2nd " -	20·45	13·10
	2) 35·50	2) 31·05
Mean -	17·75	15·57

By this it appears evident that nearly the whole of the cartridges had become more or less affected by damp. Practically, therefore, the two sorts of cartridge are equal.
The bad figure of the second target of the short-chamber cartridge being due to a single shot which fell a long way out of the group.

APPENDIX C.

Minor Alterations in the Construction of the Martini-Henry Rifle.

1. *Back Sight.*

To lie back so as to touch the barrel. To be secured to the barrel by two screws as in the rifles sent to Wimbledon, July 1870. The sliding bar to be reversible, one side quite flat, the other with a very small V notch to mark the centre. A bright line to be drawn right across the centre of the bar, and the spaces between this line and the sides of the flap to be equally divided by bright lines not quite reaching the middle of the sliding bar. The top and bottom edges of the sliding bar to be bevelled off on the side away from the eye. The sides of the sliding bar to be chequered.

2. *Main Lever and Catch.*

The lever to fit close to the stock until near the end, where it projects in the form of a loop. The form of catch to be somewhat modified.

3. *Form of Stock.*

Under this head the Committee recommend—

First.—With a view of saving the face of the firer from a blow by recoil, that the comb of the stock should be somewhat cut away.

Secondly.—A slight hollow to be cut out of the upper right rear part of the shoe to receive the thumb of the right hand when firing. This hollow should be roughed by chequering.

Thirdly.—That two lengths of stock should be issued as is done at present with the long Snider-Enfield.

Fourthly.—With a view of strengthening the stock the trap in the butt to be done away with, and the stock bolt lengthened so as to bring its head into a thicker part of the butt, while the bolt itself should be made of a milder steel than that of the experimental arms, the hole to receive it being kept as small as possible; and, finally, to prevent the rifle slipping on the shoulder while taking aim, the heel plate to be roughened and chequered.

4. *Trap in Butt.*

To be done away with and the hole to be kept as small as possible. It is suggested that the cleaning implements be carried in one of the pouches.

5. *Block Axis Pin.*

To be made of gun metal; to be a simple pin, kept in position by an eclipse or keeper screw.

6. *Trigger.*

To lie back as far as possible and to be scored longitudinally to rough the surface. The axis pin to be a screw and made of a stronger wire.

7. *Sword.*

To be of the Elcho pattern and the knob of spring to be rounded off.

8. *Safety Bolt.*

Indicator to be shifted to fit the bolt when not engaged with the action.

9. *Edges.*

All exterior sharp edges to be rounded off.

10. *Cleaning Rod.*

To be made of steel throughout, with a catch to hold under the top band by the spring of the rod itself. Head to be conical.

11. *Muzzle Stopper.*

The Committee have recommended a cover in place of a stopper.*

* Two other alterations were suggested by some of the witnesses, viz. the strengthening of the safety bolt and an alteration in the form and substance of some of the screws. After consultation with the Superintendent Royal Small Arms Factory, the Committee have come to the conclusion that it is unnecessary to accept these suggestions.

The Superintendent Royal Small Arms Factory recommended the substitution of brass for iron furniture, but after full consideration the Committee have determined not to adopt this recommendation.

APPENDIX D.

Memoranda on the Question of Re-filling Small-Arm Cartridges.

1. Memorandum submitted by the Assistant Superintendent Royal Laboratory, for the information of the Special Committee on Small-Arms, October 1870 - - - - - - - - - 52
2. Minute by Lieutenant-Colonel Heyman, R.A., with reference to the above, 25. 11. 70 - - - - 55
3. Minute by Superintendent Royal Laboratory, 6. 12. 70 56
4. Further Memorandum by Assistant Superintendent Royal Laboratory, 6. 12. 70 - - - - - 56

I.—Memorandum by the Assistant Superintendent Royal Laboratory.

I. Is the present cartridge satisfactory for all the Service purposes? If it be, then—

II. The only requirement which it does not satisfy, is the new and hypothetical one of re-filling.

From this point, three considerations branch out:—

(1.) Are we satisfied that this condition of re-filling is an important or desirable one to satisfy? and before this point is considered it is necessary to determine exactly—

(*a*) How many times re-filling is to be considered sufficient?

(*b*) What per centage of cartridges should be capable of re-filling?

(*c*) Whether this advantage is to be purchased at any, and if so, how great a sacrifice of shooting qualities, weight, general efficiency, durability, and cost.

(2.) Are we satisfied that the service cartridge cannot be modified so as to fulfil the new condition of re-filling?

(3.) Are we satisfied that any other construction of cartridge will fufil this condition?

III. Could not the desired economy be effected by using for Volunteer practice a cartridge of paper, tin, or other cheap material?

I. With regard to the first point, whether the present cartridge is satisfactory, I think there can hardly be two opinions. As regards the Service cartridges for Snider rifles, over 115,000,000 have been made; and for the past few years an annual average expenditure of 17,000,000 rounds has occurred, with the most satisfactory results, as far as the cartridge case is concerned. The *extraction* has been satisfactory, and this, be it noted, with an arm which has no *power* to extract like the more modern types of reechloaders. As regards *strength*, the cartridge has proved also perfectly satisfactory, since the adoption of the stronger cartridge, on the abandonment of No. V., which was found too weak at the base in the existing arm. I have not heard of a single instance of one of the stronger cartridges giving way.

I may add that I have fired at Laboratory Proof 222,296 of Pattern VI., VII., and VIII. cartridge, with a total of 52 defects made up as follows:—

Mis-fires - - -	43
Cut cartridges - - -	4
Anvils blown through - -	2
Caps deficient - - - - -	3
Total - - -	52

Or, if we take the total Laboratory proof of *all* patterns of these cartridges, since their first introduction, including patterns since abandoned, or admittedly defective (like No. I.), we have a total fire at proof of 654,214, with a total of only 961 defects, being a per-centage of about ·15 per 100, or 1 in every 660 cartridges. With regard to the same cartridges for the Martini-Henry, the results have been at least equally, if not more satisfactory, though furnished by a less extended experience. The reports from regiments are generally exceedingly favourable, and such little complaints

as have been made, have already been remedied by the adoption of the short-chambered cartridge. In the course of the experiments which led to the adoption of this cartridge, in the course of the Laboratory proofs, and in the trials at Wimbledon, at least 40,000 of these cartridges have been fired with exceptionally satisfactory results; and the very general employment of the Boxer cartridge in the trade —whether for large or small bores—and the fact that this construction of cartridge was definitively preferred by the late Small-Arm Committee, to any other, and adopted by that body, afford so many strong proofs of the complete success of this cartridge for service purposes.

II. If the foregoing statement as to the success of the Service cartridge for large and small-bores be correct, it leaves us to deal only with the question of re-filling. This is a condition which hitherto the Service cartridges have not been required to fulfil. This condition was not imposed upon the competing cartridges before Col. Fletcher's committee, and it seems important, before any steps are taken which may lead to the supercession, or modification of a pattern of cartridge which has given in every other respect the highest satisfaction, and our experience of which far exceeds that which can be adduced in favour of any other description of cartridge, that we should be perfectly satisfied that this condition is a desirable one to accept. I presume that the only advantage which is considered likely to result from re-filling, is economy. I do not think it worth while seriously to consider the advantage which is occasionally claimed for such cartridges, viz., that they could be re-filled on service, for the obvious reason that as all the materials for re-filling—bullets, powder, caps, and tools,—would be required, it would be much more sensible to carry the cartridges ready made up, to say nothing of the impossibility of collecting the cases on service, except during a siege. A cartridge which admits of re-filling, admits of the same case being used several times, and therefore, at first sight, may seem to save the value of the case on each time it is re-filled. But it must be borne in mind,

1st. That on active service, the cases could not be collected at all.

2d. It seems doubtful if they could all be collected even at practice.

3d. If the cartridges used for re-filling are more expensive than those which are not re-filled, from the apparent saving must be deducted the difference in the original cost.

4th. Under any circumstances credit must be taken for the value of the metal in the cases of the cartridges which are only fired once.

It will be seen, therefore, that the saving is very far from what might be supposed at first sight. A calculation which I made a short time ago with reference to the saving to be effected by introducing for the Snider rifle a tin cartridge for re-filling, will illustrate this, t us:

The cost of re-filling the cartridges was estimated at 1*l.* 14*s.* 8½*d.* per 1,000 (including powder, bullet, new cap, &c.).

The cost, therefore, of 1,000 tin cartridges re-filled 9 times (equal to 10,000 cartridges) would be:

	£	s.	d.
Cost of first 1,000 rounds tin cartridge	2	14	5¾
„ re-filling 9,000 „ „	15	12	4½
	18	6	10¼
Cost of 10,000 rounds service (VIII.) cartridges - - - - -	27	4	9
Value of old metal (145½ lbs. at 4½*d.* lb.	2	14	6¾
	24	10	2¼

This leaves the saving on the side of the tin cartridges re-filled nine times, compared with 10,000 new brass cartridges at 6*l.* 3*s.* 5½*d.** But as the cost of the empty brass (No. VIII.) cases is 1*l.* 4*s.* 4½*d.* per 1,000, this saving ought to have been to fulfil the popular expectation—

$$1l.\ 4s.\ 4\tfrac{1}{2}d. \times 9 = 10l.\ 19s.\ 4\tfrac{1}{2}d.$$

In other words, you have only realized 55 per cent. of the expected saving. In this case, too, be it noticed, the original cost of the tin cartridges was taken as equal to that of the No. VIII., and yet even under these circumstances, we see how far less the saving is than would at first sight be anticipated. It is hardly necessary to observe that if the cartridge case to be re-filled be more expensive than the other, the saving will be proportionally further reduced. I am very far from desiring to underrate the importance of effecting a saving of 5*l.* or 6*l.* per 10,000 cartridges, when the large quantity of practice ammunition expended every year is taken into consideration. But it seems to me important to recognize that your saving on the returned cases cannot be more than this, as I shall presently show it will generally be very much less.*

Before we can reply affirmatively as to the desirability of re-filling, we must make up our minds on one or two other points:—

(*a*) We must decide how many times re-filling would be held to be sufficient.

(*b*) What per-centage of cartridges should be capable of satisfying this condition of being re-filled a certain number of times.

(*c*) But, more important still, we must lay down whether this advantage is to be purchased at any, and if so how great a sacrifice of shooting qualities, weight, general efficiency, durability, and cost. In fact, we have to determine whether it be desirable to sacrifice any other advantages to purchase a saving of some 5*l.* or 6*l.* on each 10,000 returned cartridges.

With regard to shooting qualities, it is not possible to pronounce positively whether a rigid metal cartridge is, or is not, as efficient as one of coiled metal. No direct comparative experiments that I am acquainted with, have ever been made on this point. But it should be noticed that Colonel Boxer was always of opinion that the good shooting obtained with the coiled cartridges was due in no small degree to their very easy expansion, and consequently, very close fit to the chamber at the discharge.

Further, the tight fit of the rigid metal round the neck of the bullet, which is necessary to fix it tightly in its place, cannot be so favorable as the mode of attachment (by choking) adopted in the coiled brass case, which readily expands at the discharge, and allows the bullet to pass away freely. I may mention that in several cartridges which I have seen, in which an attempt to do without the cannelure, by tightening the case upon the bullet—notably in Mr. Daw's cartridge, where the top edge of the case was turned in towards the bullet—the lubrication became drawn off as the bullet passed out of the case, causing bad shooting. In the small bore the bullet is enveloped with paper smeared with bees-wax, which it is important should not leave the bullet until it has done its work of preventing leading and fouling; and it remains to be discovered by actual experiment whether, with a tight-fitting rigid case, this condition is or is not satisfied.

With regard to weight, the difference is slightly in favour of the coiled metal cartridge. For example, the short chamber cartridge for the Martini-Henry rifle weighs 190 grains; Westley Richards' solid brass cartridge, for only a 75 grain charge, weighs 200 grains, giving a difference in favour of the coiled brass cartridge of 10 grains per cartridge, or 600 grains upon each 60 rounds. If the solid metal cartridge were of a size to take 85 grains of powder, the difference would be still greater.

The next point which presents itself for consideration is general efficiency. On this point it is impossible, in the absence of any detailed comparative experiments, to give any decided opinion; but this much may be said, that whatever the efficiency of the solid metal, or any other construction of cartridge suitable for re-filling may be, it cannot be *greater* than that of the Service cartridge, the excellence of which has been, as before stated, so fully demonstrated. On the other hand, we have before us no evidence that any other construction will attain to the same general efficiency as the Service cartridge, when made in large quantities; or that it will adjust itself as satisfactorily to the slight variations in the dimensions of the chambers, which are inevitable when guns are made in large quantities. It would, however, be imprudent, if not improper, to attempt to pronounce any decided opinion on the efficiency of cartridges of which we have no experience but it would be equally improper, and contrary to all sound practice, to accept without question the efficiency of cartridges on the mere statements of the inventors and manufacturers.

But even taking what we know of the solid metal cartridge, we have enough to suggest serious doubts as to their facility of production and uniform efficiency. I shall presently quote the statement of a person, who for several months has been employed in the manufacture and inspection of the solid brass cartridge, to prove that the production of such cartridges has been attended with very great difficulty.

I do not say these difficulties are insuperable. I do not

* It will be observed that it has been here assumed that *all* the tin cases would be recovered, and that *all* would be capable of being re-filled.

* It is very important to notice that the saving would be effected on the *returned* cartridges only, and we know that the difficulty of collecting the fired cases has hitherto been considerable. It would of course increase if the empty case were more intrinsically valuable.

say that they have not already been overcome by some manufacturers; perhaps they have; but I do say that we have before us no *proof* of this, just as we have before us no *proof* of the general efficiency of this class of cartridges to set against the ample proofs which have accumulated since 1866 of the efficiency of the service cartridge. There are three points on which an advantage is sometimes claimed for a solid metal cartridge. It is said:—

1st. That it is simpler.
2d. That it is stronger.
3d. That it is more durable.

1st. But the expression "simpler" is an exceedingly vague one. In what does the greater simplicity consist? Is the solid metal cartridge simpler to *use*? Undoubtedly not. In this respect there is no difference between them. Both cartridges have to be inserted whole into the gun. No complication or delay is entailed in this operation by the service cartridge consisting of several parts.

Then, is the solid metal cartridge simpler to *make*? On this point the answer is, that the fact of an article being in many pieces is an advantage, not a disadvantage, to the manufacturer, for two reasons—(*a*) it facilitates that division of labour which is essential to rapid and economical production; (*b*) it avoids the loss and inconvenience which result when the article is spoilt in one of the operations. If the disc, or the cup, or the case of the Service cartridge be spoiled, the loss is limited to that particular part; if one of the operations fail in the production of the solid metal cartridge, the whole cartridge is spoilt and lost, except as old metal, and the extent to which this may actually occur in manufacture will be amply shown by the statement to which I have before referred of one who has been for some months engaged in the production of this class of cartridge, in which it is stated that over 30 per cent. have been rejected *before* firing proof.

Then, if the cartridges are neither simpler to use nor simpler to make, in what respect can the advantage of simplicity be claimed for them? They are simpler to *look* at, that is all.

In no practical respect is the fact of their being in one piece instead of several any benefit; and it cannot be argued that an article in many pieces is necessarily and abstractedly inferior to an article in one piece, unless those who argue thus are prepared to sustain this argument at all points; in which case they will have to maintain that a cast-iron gun, being in one piece, is superior to a composite Woolwich gun, which is built up of many pieces, or to a Palliser gun, which is a cast-iron gun with a lining introduced. The fact is, that the argument as to the superior "simplicity" of the solid metal cartridge is altogether hollow and unsound.

2d. But it is sometimes said the solid metal, or stouter cartridge, is stronger than the Service cartridge. This, again, is purely a practical question. Is the Service cartridge not strong enough? Has it been objected to on this score? If it has not, and I am not aware that it has—no practical advantage is to be derived from the employment of a stronger cartridge. A sufficiency of strength in a cartridge—a strength, that is to say, sufficient to resist all the ordinary handling, knocking about, transport, &c., to which cartridges are subjected to in the hands of the soldier on service, is all that is required. Such strength, I believe the present cartridge, whether for Snider or for short-chamber Martini-Henry, possesses, and I therefore can see nothing to be gained by introducing a stronger cartridge.

3d. The last advantage sometimes claimed for a stouter cartridge than the Service one, such as the solid metal cartridge, is that it is more durable. On this point we have no evidence whatever. I am prepared, of course, to admit that a cartridge of thicker brass must take longer to be eaten away by the action of the powder than one of thin brass, and this, I take it, is about the only sort of destructive action to which metallic cartridges are exposed. But this comparison pre-supposes a contact between the powder and the brass; without contact there can be no action, and in the present pattern Service cartridges a cemented paper lining is employed specially to prevent contact. There is no reason to doubt the efficiency of this arrangement, and the only source of deterioration being thus got rid of, the Service cartridge is likely to be quite as durable as one of stouter metal.

We have still to consider at what increased cost it would be thought desirable to introduce the system of re-filling.

It will be replied that as by the very terms of the proposition the object is to decrease the cost, no *increase* of cost can result from the arrangement.

But this reply rests upon the assumption that *all* the cartridges which are fired away will be returned and re-filled, so as to be fired at least 10 times each. The saving, such as it is, be it observed, is only in cartridges actually recovered and re-filled; on all other cartridges, if the original cost of the cartridge which is intended to be re-filled be greater than that of the Service cartridge which is not intended to be re-filled, there will be a loss. I do not know positively what the proportion of returned cases to issues would be likely to be, nor, of course, can I say what proportion of these cartridges would bear re-filling; but the number of cartridges which would not be returned would certainly be considerable, the more considerable in proportion to the intrinsic value of the metal composing them, unless the rate of remuneration for returned cartridge cases were largely increased, in which case the amount of this increased remuneration must be debited against the re-filled cartridges. Moreover, it is to be noticed that the cost of recovering the cases would be greater where the cartridges have to be re-filled than where they are merely recovered as old metal. Instead of taking the cartridges by weight, they would have to be carefully counted, and their condition noted; they would have to be carefully packed, to prevent them from becoming injured in transport. Verification of the counting and of the condition would have to be made on arrival at Woolwich; and the extra expense attending these operations also would have to be debited against the re-filled cartridges. Again, the reserves of small-arm ammunition are generally about four times the annual consumption, so that, taking the expenditure at 20,000,000, the store would be 80,000,000, and the value of this store, with the loss of interest on the money tied up, would have to be taken into account, against the re-filled cartridges. If we take the solid metal cartridge as the type of the re-filled cartridge, I find that the difference of cost is as follows:—

	Price of Empty Cases per 1,000. s.	d.	
Short-chamber Boxer-Henry	37	6	As sold by Messrs. Eley in large quantities. (*See* letter to me of 30th March, 1870.)
Westley-Richards' solid drawn cartridges (to hold 85 grains of power)	54	6	
Difference in favour of Service cartridge	17	0	

The prices quoted by other makers correspond with these. Thus: the cartridges for the Gatling battery (to take only 80 grains) are quoted at 53*s.* 6*d.* per 1,000; Ludlow quotes 47*s.* 6*d.* for 70 *grains* solid metal cartridges; Eley quotes 49*s.* 6*d.* for the same. We may therefore safely take the increased cost of the solid metal cartridges at *least* 15*s.* per 1,000.

On a reserve of 80,000,000 this would make an additional cost of 60,000*l.*

Now what is the pecuniary gain in respect of re-filling cartridges which this increased outlay in first cost of the cartridges would purchase? I have shown that even if you take a cartridge which is not originally more costly than the Service cartridge, the gain will be not more than 6*l.* 3*s.* per 10,000 cartridges. But, from this gain, as I have shown, various deductions must be made.

First, there is the increased remuneration which would have to be paid to ensure the return of cartridges of greater intrinsic value; next, there is the increased cost due to the more careful packing, counting, &c.; next, there is the increased cost due to the greater original price of the solid metal cartridges; next, if we assume, as it is fair to do, that not more than 90 per cent. of the cartridge cases would be recovered, we have the dead loss due to the increased cost of the 10 per cent. that are not recovered.

The best way of showing the actual effect, as far as it can be calculated, is as follows:—

	£	s.	d.
Cost of 1,536 solid metal cartridges (this number must be taken in first instance to allow for the successive losses of 10 per cent. on each recovery)	5	6	9½
Cost of re-filling 8,464	14	17	5½
Equal to 10,000	20	4	3
Subtract value of metal of returned cartridges *	0	6	0
	19	18	3
Cost of 10,000 Service Boxer cartridges	27	4	9
Value of old metal of 9,000	2	9	1¼
	24	15	7¾

* There will, after a deduction of 10 per cent. has been made for nine successive times, remain only about 572 of the original 1,536 car tridges.

This leaves the saving on the side of the re-filled solid metal cartridges at only about 4*l.* 17*s.* 4¾*d.* per 10,000 rounds; a saving which would have to be further and largely reduced by an unknown amount, on account of the increased remuneration and charge for recovery, packing, and cleaning,* &c. We may fairly estimate the saving at certainly not higher than 4*l.* 10*s.* per 10,000. This, in an annual consumption of 20,000,000, will be 9,000*l.* But it has already been shown that an increased capital of 60,000*l.* would have to be locked up to cover the increased cost of this class of cartridge. It would appear, therefore, that the introduction of a solid metal cartridge for the purpose of re-filling would be attended for several years with considerable pecuniary loss, even taking it from the favourable point of view which I have assumed, in which it has been supposed that each cartridge of the 90 per cent. returned will be fit for re-filling 10 times, and in which no deduction is made on account of the cost of cleaning the returned cartridges.

Another grave objection to the proposal to introduce the system of re-filling cartridges is, that it prevents a free circulation of the ammunition in store—such circulation being very favourable, or I might say necessary, to maintaining the ammunition in an efficient condition; to discovering defects, to making improvements and alterations. Whereas, *now* that ammunition is worked out about every four years, the supply would take a much longer time to work through if the practice cartridges were re-filled. To this it may be replied,—then reduce the store. But the answer to this is, you cannot reduce the store, as that store is required to meet possible war emergencies, and in war the re-filling of the cartridges could not, of course, be resorted to; so for war purposes the same number of cartridges would be required whether those cartridges were of a description suitable for re-filling or not. And it may here be noticed that during war even the annual recovery of 9,000*l.* on the returned cartridges would cease, while the cost of the supply of cartridges would be largely augmented. It is difficult to understand how, in view of these considerations, any proposition for introducing a cartridge of greater cost than the present one for the purpose of re-filling could be entertained.

(2.) But if, notwithstanding what I have urged, it should still be thought advisable—for some reason which I am unable to guess at—to adopt a cartridge suitable for re-filling, then the question arises—Is there anything to show that the present cartridge will not, with a slight modification, re-fill?

On the contrary, it was proved at a trial which took place at Hythe in 1869, and reported on by the Inspector-General of Musketry, 4th October, 1869 $\frac{82}{\frac{H}{322}}$, that the Service Boxer cartridges (No. VII.) answered perfectly for *three* times of firing, and there is no reason to suppose that if made of thicker brass (for practically the question of re-filling resolves itself into the question of the use of more metal to give greater strength) the cartridge might not be made strong enough to be refilled many times. There is nothing in the construction, that I am aware of, to forbid this.†

(3.) On the other hand, have we any sufficient evidence of what any other cartridges will do in the way of re-filling? I contend that we have no experience of any other description of cartridge, and there is before us nothing to show that any solid cartridge is capable of standing an indefinite number of times re-filling when made in very large quantities, and when fired in guns of which the chambering is not in all cases perfectly uniform; and as to the difficulties which are experienced in the production of these cartridges, the paper which I append furnishes some suggestive information.‡

III. The broad conclusions which I would draw from the above are,—

1st. That it is undesirable to attempt to introduce a system of re-filling cartridges, because the economy which such a system would effect could not, under any circumstances, be realized for many years after its introduction, while it is extremely doubtful whether any economy would *ever* be realized, and in time of war a heavy pecuniary loss would actually result. Further, the system is open to many practical objections, and whether it could be carried out at all is a matter of doubt.

2d. That the true way of effecting economy is to give up all idea of re-filling, and to introduce as cheap a cartridge as possible for once firing. The present service cartridge is the cheapest metallic cartridge of established or even of alleged excellence that I am acquainted with. It is, however, a question, and one which has been formally submitted to the Director of Artillery, whether, by using a cheaper metal, such as tin, the cost cannot be further reduced; and it might perhaps be possible to introduce for volunteer practice a special cartridge, with a body of paper or of some other inexpensive material. It will, however, probably be found preferable to use the tin cartridge for this purpose.

The saving on the tin cartridges is estimated at 4*s.* 6*d.* per 1,000, equal to 4,500*l.* per 20,000,000, or half the estimated gain on the re-filling cartridges, without any of the counterbalancing expense, inconvenience, and uncertainty.

V. D. MAJENDIE, Captain,
Assistant Superintendent, Royal Laboratory.

MINUTE BY LIEUTENANT COLONEL HEYMAN, R.A.

Director of Artillery,

I HAVE carefully considered Captain Majendie's report on the subject of re-filling small-arm cartridges, and the more I consider the subject, the more am I satisfied that no substantial advantage is likely to be derived by the adoption of a cartridge case which will admit of being several times re-filled.

The question is really one of £ *s. d.* combined with efficiency.

With regard to the latter qualification, we have abundant evidence to prove that, as far as the case is concerned, the present Boxer cartridge is most satisfactory, both as regards facility of extraction and general strength.

On the other hand, we have no evidence that any other construction, such as the solid metal cartridge case, will attain to the same general efficiency when made in large quantities, or that it will adjust itself as satisfactorily to slight variations in the dimensions of the chambers, which are inevitable when guns are made in large quantities.

The excellency of our own cartridge has, as stated before, been fully demonstrated. What then are the supposed advantages of a solid metal case?

The advantages *claimed* are simplicity, strength, and durability, and ultimate economy, because these cartridge cases are supposed to be capable of being re-filled several consecutive times. Captain Majendie has very forcibly shown that the alleged superior simplicity is a practical delusion; that as regards superior strength, our present cartridge is quite strong enough, and that no practical advantage would be gained by employing a case stronger than what is actually required to fulfil serviceable conditions; and as to superior durability, the advantage can only be admitted in so far that a solid metal case, which is capable of being re-filled several times in succession, is more *lasting* than one which is expended the first time it is fired.

The question of re-filling resolves itself, therefore, into one of economy; and to compare the value of the system under this aspect it will be necessary to resort to figures.

At the time when Colonel (now Major-General) Boxer proposed his tin cartridge-case for purposes of re-filling, it was shown by calculation, based on the assumption that the cases would bear re-filling nine times in succession, that a saving of 6*l.* 3*s.* would be effected in every 10,000 cartridges.

It must be observed, however, that the original cost of the tin cartridge was taken as equal to that of the present service pattern; and further, that the saving would only be effected in the event of the whole of the expended cartridge cases being returned for re-filling nine times in succession.

Now, the difficulty of collecting the fired cases is so well known, that to assume the recovery of 90 per cent. of the empty cases is perhaps far beyond the mark; but on such assumption there would be a deduction of 10 per cent. for nine successive times, which would have to be made from the original estimated saving; and this amount would be further increased by sums paid for remuneration to ensure the return of the empty cases, so that the actual saving on 10,000 cartridges would in all probability be under 4*l.* 18*s.* This, on an annual consumption of 20,000,000, would amount to about 9,800*l.*

Experience, however, has shown that the tin cartridge-case will not answer, as was originally anticipated for re-filling purposes. If, therefore, the system of re-filling is to

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* The extent to which the amount of cleaning which the cartridges would have to undergo would increase the cost was strikingly illustrated by the condition of some cartridge cases returned after once firing in the Gatling battery. These cases were full of dirt and sand, and thickly covered with verdigris.

† Since this was wrirtten I have carried out an experiment with Boxer cartridges made of ·008″, instead of ·005″ brass—no other difference—with the following results:—The whole of the 12 cartridges tried stood 25 times firing; 11 cartridges stood 28 times; 9 cartridges stood 30 times; 8 cartridges stood 32 times; 5 cartridges stood 33 times. The experiment is given in detail in my Report, 6.12.70, printed herewith (p. 56).

‡ It has not been thought necessary to print this paper.

be entertained, we must have recourse to a different type of cartridge; and the one that has most claim to notice is the solid metal cartridge-case so extensively used in America.

The cost of these cartridges is about 15*s.* per 1,000 greater than the present Service pattern (No. VIII.), and it is obvious that the greater intrinsic value of the metal would have the effect of considerably diminishing the proportion of recovered and returned cases, unless the rate of remuneration were largely increased.

In any case, an additional expense would have to be debited against the re-filled cartridges; and the saving, under the most favourable circumstances, would be reduced to about 4*l.* per 10,000 rounds, or on an annual consumption of 20,000,000, to about 8,000*l.*

But then we have the reserves of small-arm ammunition to deal with. These are laid down at four times the annual consumption, so that the store, based on the annual consumption of 20,000,000, would be 80,000,000.

To provide for this store of solid metal cartridge-cases, an increased capital of 60,000*l.* would be required to cover the increased cost of the aforesaid cartridge-cases, so that in reality the system of re-filling, if adopted, would be attended for several years with considerable pecuniary loss; and in times of war, when the process of re-filling could not be carried out, a very largely increased expenditure would result.

It has been shown also that the solid metal cartridge-cases are heavier than the present Service cases; and this excess in weight, when considered in connexion with military requirements, would probably compromise the whole packing arrangements of the Service.

Looking, therefore, at the question of re-filling from every point of view, and taking into consideration the circumstance that we have no evidence as yet to show that these cartridge-cases will withstand an indefinite number of times re-filling, or that they will be found suitable for arms in which the chambering is not in all cases perfectly uniform; that the economy which such a system would effect would not, under any circumstances, be realized for many years after its introduction, while it is doubtful whether any economy would ever be realized at all, and that in time of war a heavy pecuniary loss would actually result, it appears to me very undesirable to contemplate the possibility of introducing such a system.

The scheme, I admit, at first sight appears attractive; but the more closely it is investigated the more delusive it becomes.

If economy is to be attained, it should be sought for in cheapening our present cartridge. Already some tin cartridges, *not made for re-filling*, have been tried and most favourably reported on by the School of Musketry at Hythe; and the Superintendent Royal Laboratory has now proposed a further modification which has for its object a still further reduction in the cost of the service cartridge.

H. HEYMAN, Lieut.-Colonel.

25. 11. 70.

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3. MINUTE BY THE SUPERINTENDENT ROYAL LABORATORY.

Director of Artillery,

I agree entirely with Captain Majendie's Report; anything I could say would be merely repetition, as he has fully stated the whole case. I would only add that should it be found at any future time (which I do not expect) desirable to adopt the re-filling system, there is nothing to prevent our adapting the present form of cartridge to answer all the purposes.

I have received the accompanying additional Report from Captain Majendie, of experiments conducted in this Department, which brings the subject up to date. I entirely concur with the conclusions arrived at by Captain Majendie in his later Report.

T. W. MILWARD, Colonel R.A.,
Superintendent Royal Laboratory.

6. 12. 70.

4. FURTHER MEMORANDUM BY THE ASSISTANT SUPERINTENDENT ROYAL LABORATORY.

On the 11th ultimo I reported to you the result of an experiment which I carried out to test how often the Boxer No. VIII. cartridge would stand re-filling, and the conclusion which I drew from that experiment was that "at least 50 per cent. of the present cartridges (VIII.) "will stand *four* times firing, and that some will stand up "to five and six times." I added, "I have no doubt "that by increasing the thickness of the metal, the cart-"ridges might be made to stand a great many more times "firing." With a view to determine this point, and to establish the soundness of a view which I had propounded in my memorandum on the question of re-filling cartridges—that there is nothing in the coil construction of cartridge to interfere with re-filling, and that it is purely a question of amount of metal—I caused 12 cartridges to be made with brass ·003 in. thicker than that used for the case of No. VIII., viz., ·008 in. instead of ·005 in. These cartridges were not covered with paper, but had the brass cut slightly crosswise. There was no other difference between them and No. VIII. They stood firing as under:—

The whole 12	cartridges	stood	25	times	firing.
11	"	"	28	"	"
9	"	"	30	"	"
8	"	"	32	"	"
5	"	"	33	"	"

I question if these results have been surpassed, if indeed they have been equalled, by any other description of cartridge whatever. The loading and extracting were in all cases satisfactory. The cartridges became unserviceable chiefly through cutting at the choke and through the inner cup.

A cartridge of this construction would of course be more expensive than the existing pattern cartridge, because more metal is employed in its manufacture, and the operation of rolling a thick case is more troublesome than that of rolling a thin case; but the expense would be far less than that of the solid metal cartridge, and the facilities and certainty of production would be much greater, while all the advantages of the present Service construction of cartridges and of the present plant for the manufacture of the same would be preserved.

As you are aware, I am strongly opposed to the idea of re-filling at all. I have shown in a long memorandum that the supposed aduantages of re-filling disappear when the subject is closely investigated. I am glad to observe that you concur in this view; and Colonel Heyman, to whom the subject has been referred, has reported strongly in the same sense. Since my memorandum on this subject was written, the view which I therein put forward has received confirmation from the condition of some solid metal cartridges which I have seen in store, returned after one firing in the Gatling battery These cartridges have been no further than Shoeburyness; they were fired only a few months ago; the collection of the cases was conducted under exceptionally favourable circumstances, and yet I find them in such a condition that the expense of cleaning and preparing them for re-filling must be considerable. They are covered with verdigris, sand, and dirt; and an inspection of them would, I fancy, shake even the most determined supporter of the system of re-filling, as to the practicability of re-filling cartridges many times. The object of the present experiment, therefore, has been, not to support the system of re-filling, but to show that if hereafter it should be thought desirable to re-fill cartridges, this end can be attained without any departure from the present construction, simply by increasing the thickness of the brass by which the case is formed from ·005 in. to ·008 in.

V. D. MAJENDIE, Captain
Assistant Superintendent Royal Laboratory.

6. 12. 70.

APPENDIX E.

LETTER FROM LIEUT-GENERAL THE RIGHT HON. SIR W. MANSFIELD, G.C.B., G.C.S.I.

18, Grosvenor Gardens,
January 18, 1871.

Dear Lord Elcho,

I HAVE inspected the new pattern rifle sword now lying at Messrs. Wilkinsons' in Pall Mall.

This sword unites the length of the old rifle sword to the cutting and chopping qualities of the Goorkha kookery, the lower end of the blade and the weight of the weapon being arranged after the manner of that best of all chopping knives.

If this weapon should come to be the regulation rifle sword for the whole of the infantry, a want will be supplied hereafter, the existence of which has hitherto been

a constant source of perplexity to British general officers in the field.

Thus, in addition to an excellent weapon, the soldier will find in this newly modelled sword an admirable tool with which to chop firewood for cooking purposes, to cut paths through jungle, to open a way through a thick fence, to fashion the branches of an abattis, in short, to do everything for which a good chopping knife is required.

In our campaigns we have often been exposed to great difficulties for want of such a device, besides that when billhooks or axes have been rateably served out to troops and companies, a proportion only of the men has been furnished, those men having been thus encumbered with extra weight and an extra implement requiring adjustment on their person.

But, further, it often happens amidst the circumstances of war that the billhooks and axes are not in the front when they are wanted, or that, if they are, they are so bad and frail they go to pieces in the hands of the men using them.

This was reported to be the case in a campaign of which I had to arrange the details on the borders of Bhootan in 1865–66. I was obliged consequently to move the Government of India to buy, at considerable expense, native-made kookeries, and to serve those out to the troops in the place of the British made billhooks which came from the arsenals. It is probable that these articles are now improved in the Indian arsenals, since the matter was brought prominently to the notice of Government. But I believe it to be true that, according to mechanical principles, a billhook, owing to its shape, can never be so good a tool for the purposes referred to as the kookery, the principle of which is adopted in the new pattern rifle sword. If, in addition to correctness of form, care be taken to put the best material into the rifle sword and to ensure a perfect temper in the metal, the application of this weapon to the army cannot fail to be a great and very practical improvement in the equipment of the British infantry soldier.

Very truly yours,
W. R. MANSFIELD.

APPENDIX F.

PROGRAMME for the Examination of Witnesses on the Character of the Mechanical Construction of the Martini-Henry Rifle.

The witnesses will be requested to direct their attention to the mechanical arrangements of the breech-action and stocking of the rifle, and to state their opinions on the following points, viz.:—

A. On the facility and economy of manufacture of the breech-action, in its various parts, having reference not to small supplies of hand-made rifles, but to large supplies produced by machinery, at the Government Small-Arms Factory, or at high-class private manufactories, under proper supervision.

B. On the simplicity and efficiency of the breech-action generally, and of its fitness, as a whole, if introduced in rifles manufactured as above stated, to do its work in all climates with safety and regularity.

C. On the mechanical character of the various parts, viz.:—

1. Of the falling block, and its power to resist the explosion of the charge without undue strain to any of the joints; and at what point or points the recoil would be transferred through the back part of the falling block.
2. Of the spiral spring and the striker, and if when combined and worked as proposed they are calculated to give an adequate and uniform blow to the detonating cap, without damage to the striker or liability in the spring to fracture or loss of power by use.
3. Of the working lever, whether it is properly placed, and if it has adequate power for its duty of lowering and raising the block, cocking the rifle as the block falls and rises, and working the extractor as the block falls, and keeping the block up to its place when firing; and whether this lever is likely to continue to do its work properly.
4. Of the centre pin upon which the lever works, and at the same time the tumbler and the indicator, whether such combined use of the one pin is desirable in the view of simplicity, efficiency, and permanence, and whether the accuracy of the indicator is permanently reliable.
5. Of the tumbler, sear, and trigger, whether in their combined action they are safe and strong, and capable of proper adjustment of their bearing surfaces, to such an amount of uniform and steady pull, whether large or small, as it may be desired to give, and whether they may be expected to retain such uniform and steady pull in use.
6. Of the safety bolt, as to its simplicity, efficiency, and permanence.
7. Of the cartridge extractor, and whether by its form and the way in which it is acted upon by the falling block, it is calculated to do its work properly and permanently.
8. Of the arrangement of all the parts of the breech-action within a closed metal case, and whether such an arrangement is desirable or otherwise, having reference to compactness, strength, and protection from dust and wet.
9. Of the strength and permanence of the mode of stocking.

D. On the measure of importance of any defects which may be considered to exist, the way in which they would show themselves and after how many rounds, the facility of repair if repair should become necessary by reason of such defects, to what extent any such defects if theoretically assignable would be likely to show themselves in rifles equal in character of work to the present Government rifles, well made and properly tested and inspected, how far any such defects may be inherent in the Martini action, and inseparable from it, or capable of correction without material change of design, by the fair substitution of some simple and well-known form of detail.

H. C. FLETCHER, Lieut.-Colonel,
President of the Small Arms Committee.

War Office,
3rd December, 1870.

APPENDIX G.

MINUTES OF EVIDENCE

TAKEN BEFORE THE

SPECIAL COMMITTEE ON MARTINI-HENRY BREECH-LOADING RIFLES.

War Office, Wednesday, 4th January 1871.

PRESENT:

LIEUTENANT-COLONEL H. C. FLETCHER IN THE CHAIR.

Lord ELCHO, M.P.
Major HAIG.
Captain CHAPMAN.
Captain MAJENDIE.
Captain AYLMER.
C. H. GREGORY, Esq., C.E.
E. ROSS, Esq.
Lieutenant TUPPER, *Secretary.*

Dr. Pole.

4 Jan. 1871.

WILLIAM POLE, Esq., F.R.S., examined.

1. (*Chairman.*) You have been connected, I believe, with the Royal Society?—I am a Fellow of the Royal Society, and have been a member of Council.

2. You are also connected with the Institution of Civil Engineers?—I am a member of the Institution of Civil Engineers.

3. Were you not for some time employed at University College?—I was for many years Professor of Civil and Mechanical Engineering in University College, London.

4. You have also, I believe, been employed on committees in connexion with the War Office?—I have. I was a member of the Iron Armour Plate Committee which was in existence for several years, and I was also one of the civilian engineering members of the Armstrong and Whitworth committee for investigating the comparative merits of those two systems of rifled artillery.

5. For how long have you been employed as a mechanical engineer?—I was brought up as a youth in a mechanical workshop, and I have been all my life since connected professionally, more or less, with mechanical engineering.

6. I believe that you have had before you the programme for the examination of witnesses on the character and mechanical construction of the Martini-Henry rifle?—I have.

7. Have you examined the mechanism of the Martini action, in connexion with this programme?—I have.

8. Have you prepared any written statement of your opinion with reference to the questions contained in this programme?—I have.

9. Will you be so good as to read it to the committee?—I will do so with great pleasure.

Having reference to the programme issued by the committee I find it will be most convenient to begin with the division C., "On the mechanical character of the several parts," and I will remark on the several subdivisions of this *seriatim.*

C. 1.—*On the Falling Block, and its power to resist the explosion of the charge.*

It is a necessary condition of the contrivance of a radially-moving block for closing the breech, that the main centre at its back end on which it moves must be, not in a line with the axis of the barrel, but at a certain distance above it.

This position of the centre not only allows the block to fall clear away from the end of the barrel, but when it rises again, causes its face to press against the barrel end, so as to ensure close contact. In fact it is to the raised position of the centre that the efficiency of this ingenious mode of closing the breech is chiefly due.

But it is a consequence of this construction that the block has no *point d' appui* to resist the recoil of the explosion, placed immediately in the position where it would be most effective and most properly situated, namely, in a *direct line with the axis of the barrel.*

The raised main centre will take a large share of the resistance, but the recoil, acting below it, will give the block a tendency to fall, or rotate round its centre. This tendency is diminished by a circumstance which I shall hereafter explain; but treating it now as simply the result of the statical action of the force of the recoil, it would require to be resisted by some external support placed below the block. In the Martini-Henry rifle such a support is formed by the tooth or short lever which actuates the block, and which after forcing it up to its proper closed position, wedges itself under a notch made in the block for

the purpose, and so offers the required resistance to the recoil.

The proportions of the resistance, which, according to the resolution of the forces, would be taken by the main centre and by the external prop respectively, may be easily calculated. I find that in the short action rifle, estimating the force of recoil of the cartridge = 100, the resulting pressures would be, on the support = $38\frac{1}{2}$, and on the main centre = 98, the latter acting in a direction slightly upwards, at an angle of about 23° with the line of barrel.

There is, however, another important element affecting the equilibrium of the block, namely, the resistance to motion offered by the *friction of the base of the cartridge case* on the block face. The effect of the recoil is to press these surfaces together with great force, and so to cause a considerable obstacle to their sliding on each other, which they must do if the block moves. The value of this resistance may also be estimated, and I find that if the coefficient of friction be greater than $\frac{1}{7}$th (which it will be in the ordinary condition of the surfaces) the block will have no tendency to turn or fall even if the lower support be removed.

The chief resistance, namely on the main centre, is not taken by the centre pin, but is thrown entirely on a solid knuckle joint of about $\frac{1}{2}$ inch in diameter. This abuts directly on a strong solid part of the lock-case, which is firmly united to the barrel; so that the system of forces is self-contained, and the entire mass of the iron work of the gun is brought by its inertia to resist the blow. The duty of the centre pin is confined to acting as a centre of motion.

Any pressure coming upon the supporting arm would be carried down to the strong centre pin of the main handle, and so transmitted to the solid metal of the case; but, as previously explained, this pressure is much reduced, if not removed altogether, by the friction against the block face.

To show that this friction really acts in this way a remarkable experiment has been tried at Enfield, which was repeated yesterday in my presence. The strong steel pin of the handle centre was taken out, and a soft lead pin substituted; the gun was then fired twice with ball cartridge and then examined; the lead pin came out with perfect ease, and exhibited no mark of the contact of the prop, showing unmistakeably that the latter had sustained no strain from the recoil. The pin will be produced here to-day. A further proof was afforded, in the same experiment, of the direct back action of the recoil by taking out the main centre pin of the block, and cutting away the upper part of the knuckle socket, so leaving the hinder end of the block quite free to move upwards, and fly out of the case. But when the gun was fired the block did not stir, showing that the effect of the recoil was transmitted almost directly backwards, without any material tendency to force the block either in an upward or a downward direction. It is worthy of remark that the original Peabody falling block, the type of all the modern ones, had no lower support; from which it is to be inferred that the direct action of the recoil was known to the inventor of that arm.

C. 2.—*On the Lock Action Proper, the Spring and Striker, &c.*

It must be admitted that the Martini lock action is a considerable innovation on the old plan, and it will throw light on the comparison between the two to inquire into the nature of the circumstances that have determined the change.

In all ordinary percussion firearms as made down to a few years ago, the fulminating cap has been placed on an external nipple; and no more convenient mode of striking it could be devised than a direct adaptation of the old flint lock, by substituting for the flint forceps a solid hammer moving round an axis as before. In order to give this radial motion, and to produce thereby a forcible blow, the most expedient means was to use a spring of a flat form, which would lie conveniently against the lock plate; this spring being connected by a link and internal lever to the axis of the hammer.

It would seem, therefore, that this form of main spring and its somewhat complicated and indirect connexion with the hammer were determined entirely by, as they were admirably adapted to, the old position of the detonator outside the gun. It is at least difficult to see how, under this condition, any other form of spring could have been advantageously used, or how it could have been made to act more directly on the striking body.

But the invention of the breech-loading cartridge, with a detonator at its centre, introduced a new fundamental condition for the striking apparatus. It was evidently possible to adapt something to this which should be more simple, more compact, and more direct in its action than the old apparatus; and for this object nothing could be more appropriate than a spiral spring, actuating a straight striker, both placed immediately behind the centre of the cartridge, and having their line of motion directly upon the point to be struck. It was only necessary so to arrange the breech-closing apparatus as to give room for such a spring and striker in the line of the barrel, and the lock action was at once obtained in the simplest manner.

The inventors of the French *Chassepot* and the Prussian *Nadelgewehr*, as well as the designers of other breech-loading central fire rifles seized upon this idea, which has also been adopted by M. Martini.

The arrangement of this striking action, so simple in its construction, so direct in its action, and so secure and sheltered in its position, is altogether so admirable and, to use an untranslateable German word, so *zweckmässig*, that I can hardly understand the proposal to substitute for it the more cumbersome, complicated, indirect, and exposed mechanism of the old lock, which was intended for and adapted to an entirely different set of fundamental conditions. I conceive such a substitution would be mechanically a retrograde step, which could only be justified by the existence either of some great defect in the new lock, or of some great superiority in the old one. It is, therefore, desirable carefully to compare the principles and practical action of the two, in order to see if any such reason for the change can be found.

It has been said that the effect of the spiral spring is more in the nature of a pressure than a blow, but this assertion does not seem to be tenable in the present case. The principle of action is alike in each variety. In the act of cocking the hand furnishes a quantity of mechanical power, or "work" which is employed to overcome the resistance of the spring through a certain space, and which remains stored up in the spring so long as it is held by the detent in its full state of compression. When the spring is let go, as it finds little or no resistance, it flies back, and during this motion, the work stored up in it is employed in giving *velocity* to the striker or hammer and other parts moved, so that by the time it has arrived at the end of its stroke, the power or work originally put into the spring by cocking has (with some small deductions for friction, &c.) become converted into the *vis viva* of the moving parts; and finally, when these parts are brought to rest by striking the cartridge, this amount of power or work is given out upon the fulminating cap, causing its ignition.

The amount of power or work employed, and the consequent dynamic power of the blow, are capable of easy determination. I have endeavoured to estimate them in the short action Martini, and to compare the result with that in the Service Snider-Enfield. Taking the data furnished me by Colonel Dixon, (the resistance of the Martini spring I have taken at 40 lbs., that of the Snider spring at 56 lbs., both at full cock,) I find in the Martini action the quantity of work is = about one unit (*i.e.* what would be equivalent to raising 1 lb. 1 foot high) whereas in the Snider it is about 1·68. Hence the dynamic power of the blow

Dr. Pole.
4 Jan. 1871.

in the Snider is two-thirds greater than in the Martini, which is reasonable, as in the former it is more indirect in its action, and has to pass through the medium of the long oblique piston with its strong spring, whereas in the Martini the whole power stored in the spring, with the exception of a very minute friction, is discharged directly upon the detonator.

It is further possible, knowing the weights of the parts in motion, to calculate, by the laws of dynamics, the *velocity* with which, in each case, the striker impinges on the cartridge. In the Snider this comes out under 30 feet per second; whereas in the Martini, from the lighter mass in motion, the velocity is nearly 35 feet per second.* So that, although the dynamic force of the blow is less, the striking velocity is greater; or in other words, instead of being, as has been asserted, analogous to a dead pressure, the Martini spiral spring really strikes a smarter blow than the old lock action.

But after all the efficiency of the blow is really a question for experiment. Repeated trials will show whether, with a certain strength and range of spring, the ignition is certain; and if so, nothing farther is wanted. If on the other hand miss-fires are found to occur, the strength or range of the spring will require increase till the requisite certainty is ensured. The foregoing calculations are only useful as shewing the erroneous nature of the objection to the Martini action on the supposed ground of a difference in the nature of the blow.

It remains to say a few words on the chief practical points in the lock action.

First, as to the nature of the spring. It is objected that the spiral spring is less trustworthy than the flat one; but I cannot think that there is any good ground for such an assertion. The spiral spring is a form which has been used long enough, and often enough, to prove its efficiency. Two well-known examples of its extensive use may be mentioned, one on the largest, and the other on the most delicate scale, namely, the railway buffer, and the chronometer balance spring. Between these there are all sorts and sizes of spiral springs, used in all sorts of ways. Almost all complicated and delicate machinery abounds in them, and without them many mechanical contrivances would be almost impracticable. At Enfield there are machines containing spiral springs, each of which makes nearly a million strokes per week; and yet these have worked for years without requiring repair or giving any trouble, and without losing power. One large application illustrates the *permanence* of the strength, namely, the Salter's spring balance, which is seen upon every safety valve of railway locomotives. If the force varied with the age or use of the spring the thing would be useless and untrustworthy, but it is not found so. The spiral spring is probably the simplest, cheapest, and most easily made of all forms, and I know of no reason why it cannot, by goodness of material, and care in manufacture and tempering, be given as great a degree of perfection and permanence as any other kind of spring. One of its greatest advantages is its independence, requiring no fixed abutment as the flat lock spring does.

In the Martini rifle the spring and striking action are completely housed, not only within the general external case, but also further within the internal falling block, a very great protection, as is shown by the admirable way in which these arms appear to have stood the tests of exposure. It is asserted as a countervailing disadvantage, that the parts within the block are liable to get fouled or clogged up with dirt or oil; but I am not aware that this is shown by experience, and the facility of cleaning would be, I should think, an answer to the objection.

* Colonel Dixon has confirmed this result, not only by calculation, but by an interesting experiment. He has let the striker fall from various heights upon a cap, and has found that when the height is such as to give a velocity of about 35 feet per second, the cap is fired with the same certainty as in the gun.

C. 3.—*On the Duties and Action of the Main Handle.*

I believe this is usually called the lever, but I call it the main handle, because there are so many levers in the motion, that it is perhaps a better distinguishing name.

The main handle has three duties to perform, viz.:—

(*a*) To raise and lower the breech block.
(*b*) To cock the lock action.
(*c*) Indirectly to actuate the cartridge extractor.

The last of these will be noticed under head C. 7. It is only necessary here to speak of the other two.

(*a*) *Action of the Main Handle in lowering and raising the Breech Block.*

The motion of the breech block is effected by a short arm fixed on the handle, and engaging in a notch in the block; this arrangement is in duplicate, one arm and notch actuating the block on each side.

This arm is usually called a lever; but I am inclined to infer from its peculiar form, that the inventor had in his mind the idea of causing the two members, the block and the handle, to rotate together by toothed gearing, one tooth of which (being sufficient for the small angular motion required) is represented by the arm in question. In order to show that, I have made a diagram with an imaginary continuation of the teeth (see Plate I.). This (*pointing to the diagram*) is the arm as existing in the Martini-Henry rifle, and I have drawn those dotted teeth in order to show that it really is one tooth out of several, and that the main idea of communicating motion is by tooth sectors, of which one tooth is sufficient to communicate the small motion which is required.

This view of the case aids materially in judging of the mechanical fitness and merit of the arrangement, inasmuch as the communication of angular motion by toothed gearing is a very common and approved contrivance; and the adaptation of it by a single tooth to a slight motion, assumes a more legitimate character than if the arm were treated as a mere short bar, without any special design.

At a certain point of the upward motion of the block the tooth enters a side recess, and gradually fixes itself firmly under the block, so as to form the support to it when it has arrived at its proper position for firing. This has been mentioned under a previous head.

It is, I believe, said that it would be more advantageous to communicate motion to the block at a point farther from the main centre and nearer to its front end. There is no doubt that a force so applied would exert a greater power over the angular motion of the block; but the question here would arise, whether such an increase of power is wanted? For it is evident that if the present arrangement is sufficient for all the reasonable requirements of the arm, no departure from it, on the ground of a mere hypothetical superiority, would be any real advantage.

In the ordinary normal action of the gun, there is certainly no sign of insufficiency of power, the movement of the block, in both directions, being easy and certain. It can only be to meet abnormal and exceptional cases that an increase of power would be required. I have no means of judging what cases of this kind might arise; I can conceive that the sides of the block or of the external case, or both, might become rusted or dirty, when the block would be difficult to move; and I have also heard that great power might be wanted to raise the block in order to force home a sticking cartridge. The probability of these or other such contingencies arising, and the necessity of providing for them, are questions I must leave for the consideration of the Committee. All I can say is that the present is a good mechanical arrangement; it is part of a general design presenting, as a whole, great advantages; and unless satisfactory proof can be brought of its practical insufficiency there would seem no satisfactory ground to warrant its condemnation.

In raising the block the tooth has to overcome a resistance arising from the force of the main spring, which (as hereafter explained) it has to compress to some extent to complete the cocking. This resistance is felt most strongly when the tooth is about to slide into its final bearing. It is objected that under this force the friction of repeated use would tend to wear away the tooth and notch, the result of which would be that the block would not be brought up to its proper position. No doubt the force acting on this point is considerable, but as the parts will of course be either made of steel or case hardened (which is the same thing as far as the surfaces are concerned) and as the friction will, under ordinary circumstances, be kept down by regular cleaning and oiling, no considerable wear should occur. Besides, a careful examination of the action will show that the heavy friction will come only on the front corner of the tooth, and on a small projection it works on; and that even if these parts wear away a little, the *top surface* of the tooth and its corresponding face in the block, (on which the final position of the block really depends) will remain unaffected, the only result of the wear being a little change of the velocity of motion, a little tardiness in coming up to its place, which is quite immaterial. Moreover, as the absolute tightness of the fit of the block face against the barrel is not essential with the new cartridge, the only evil of the block not fully rising would be that the striker would impinge a little too low, and if this happened to such an extent as to cause a miss-fire, the defect would be at once discovered, and a remedy might be easily applied, by either slightly drawing out the tooth or substituting a new one. It would I think be easy by a slight modification of the top of the tooth to make it self-adjusting if necessary.

It has further been objected that the wear of the axis of the main handle would also produce similar evils, but this with hard surfaces would be unlikely to occur, and if it did the remedy would be as easy as in the former case.

These questions of wear should however be submitted to practical trial, which would soon show the value of any objections made in relation thereto. I have been shown a rifle which is said to have passed a very large number of rounds, 30,000* I think; and on the most careful examination of the parts I can find no trace of any wear. Some of these parts will be produced here to-day.

(*b*) *Action of the Main Handle in cocking.*

The cocking is done by the same motions which actuate the block, and it is worthy of remark that by a very ingenious arrangement the work is divided between the two motions, forward and backward. This diagram (*producing the same*, Plate II.) shows the three positions: first after discharging, secondly with the block lowered, and thirdly with the block raised again and the gun cocked.

In the first or forward motion of the handle (lowering the block) the upright arm of the tumbler, which is actuated by a shoulder on the handle, pulls back the striker, compressing the spring by about 3-10ths of an inch, the tumbler striker and spring being all held in position by the tumbler rest having caught under the upper notch or "bent" of the tumbler.

When the handle is moved backwards (raising the block again) the striker and fore end of the spring are held in position by the tumbler independently of the motion of the block, but the stop or resisting base at the back end of the spring (which is fixed to the block and moves with it), is caused to move forwards, shortening the distance between it and the fore end of the striker, and thus compressing the spring about 1-8th of an inch more.

If by a mistake of the shooter he pulls the trigger when the block is down, no harm will be done, for the spring will raise the block to its place again, and as it has not been fully compressed, and as it has work to do in raising the block, it will probably not have power enough to fire the cartridge.

C. 4.—*On the Centre Pin of the Main Handle.*

This pin is a very ingenious part of the mechanism; it has several duties to perform.

In the middle of its length it carries the tumbler of the lock-action, which fits on a square part of the pin, and consequently whenever it is moved the pin revolves with it.

On each side of this come the jaws of the main handle, serving to raise and depress the block; these are perforated with round holes and turn on the pin.

Outside these come the two sides of the trigger-guard, which the pin passes through and serves to fasten into the general frame. Beyond these again the pin passes through the two walls of the main case.

On one end of the pin, outside the case, is fixed a pointer, called the "indicator," this is in one piece with the pin, and as the pin must always move with the tumbler, the position of the external indicator will always show whether or not the gun is cocked.

The pin is kept in its place by what is called an "eclipse" screw, an ingenious and effective contrivance, which allows the pin to turn without the danger of working loose, which would arise if it were fastened by an ordinary thread or nut.

None of the various offices of the pin interfere with each other, and this pin is efficient for all. It is strong and of large diameter; and is, I believe, made of hard steel.

C. 5.— *On the Trigger Action.*

The trigger action as now made in the Martini-Henry Rifle, is peculiar, and differs from every other action I have seen. Although exceedingly simple in construction, its *modus operandi* requires careful attention thoroughly to understand, and is not easy to describe. It will facilitate the description to state certain facts communicated to me by Colonel Dixon as to the history of this part of the mechanism.

In its original state, the action consisted merely of a simple trigger prolonged upwards, the top of which engaged in a notch or "bent" of the tumbler, and was liberated, discharging the gun, by the pressure of the finger below.

This exceedingly simple arrangement was however attended with some disadvantage in consequence of the great pressure of the spring on the bent or notch of the tumbler, which amounted with a 40 lb. spring to about 75 lbs. If the line of the bent or notch was radial, that is to say, in a line with the centre of the tumbler, the pull necessary to detach it was found too heavy, and if this was eased by inclining the line of the bent the gun was unsafe and liable to go off when struck on the ground.

To remedy this, Colonel Dixon devised the present motion. In it the tumbler rests securely on a piece separate from the trigger and analogous to the ordinary sear, and which is in this gun called the "tumbler rest."

The trigger is made to move on its centre pin with a slotted hole, the long axis of this slot being inclined at a particular angle, and when the gun is cocked the trigger is quite loose, playing about in its slot, and not touching either the tumbler rest or the tumbler.

When however the pressure of the finger is applied in this direction (*describing the same*), the trigger, pressing the inclined surface of the slotted hole against the centre pin, rises, and its top-end engages under a second notch in the tumbler below the main bent, and as the finger pressure increases, an upward force is exerted on the tumbler, thus relieving the tumbler rest from a portion of the weight it previously sustained. At the same time the trigger acting as a simple lever, its upper end presses horizontally outwards against the tumbler rest, and when the latter is sufficiently lightened the trigger end forces it away, disengaging it from the bent and discharging the gun.

* This rifle had probably fired about 10,000, not 30,000 rounds.

Dr. Pole.

4 Jan. 1871.

It might be said that this action is only relieving the tumbler rest of a weight to put it directly on the end of the trigger, and that no good is done; but that is not so, for this reason:—The weight relieved from the tumbler is taken on the upper end of the trigger; but the surface of the latter is considerably inclined, so that it will slip away with ease; and it is found, I believe, that by altering the angle of this surface the discharging pull may be adjusted and made lighter or heavier at pleasure.

I find by calculation that a pull of 8 lbs. on the trigger will give an upward force of about 24 lbs., so reducing the pressure on the tumbler rest from 75 lbs. to 51 lbs. It also gives an outward horizontal thrust against the tumbler rest of about 14 lbs., which is ample to disengage it from the friction of the bent. The usual pull varies I believe from 4 or 5 lbs. to 7 or 8 lbs. according to the state of lubrication of the surfaces.

(*The witness illustrated the above remarks by the diagram, Plate* III.)

I learn that in an ordinary Snider lock, the pressure on the bent is about 36 lbs., and it has been urged that the pressure in the Martini, being so much greater, gives a tendency to a more rapid wear, by which the original adjustment of the pull of the trigger will be disturbed, and the action become untrustworthy.

The value of this objection will depend on the original strength, hardness, and accuracy of the parts and likewise on the care bestowed on the use of the gun. If the parts are strong and hard, and are kept clean and well oiled, I should not think that they would materially suffer under long use; but this perhaps is a matter for practical trial. In the gun shown to me which had passed such a large number of rounds no trace of wear on these parts was perceptible. The parts will be produced here to-day.

I cannot see any ground of objection to any other part of the apparatus, all the directions of the pressures and bearing parts appearing to me properly and mechanically adapted for performing their duty.

The action undoubtedly requires accuracy in the manufacture, but this condition must always be expected with arms of such precision and perfection as that now in question, and it is for the purposes of obtaining such accuracy as I understand that the beautiful contrivances of the Enfield manufactory have been in a great measure designed. Moreover, some of the parts seem a little delicate, but they are well protected, and they are capable of being strengthened, and the bearing surfaces increased if necessary.

The looseness of the trigger when the gun is at full cock, and its slight tendency to rise, when first pulled, appear to be liked in practice as being analogous to the ordinary action.

C. 6.—*On the Safety Bolt.*

This appears to be made on a good principle, namely, that of inserting a bar under the tumbler rest, which, as long as it is kept there will effectually prevent the gun from going off. But the mechanism is delicate, and might be liable to get out of order, or be clogged up with dirt. Moreover, it works at a disadvantage by the power being applied considerably out of the line of motion, which throws an oblique strain upon the parts. Probably this part of the apparatus would admit of improvement.

C. 7.—*On the Cartridge Extractor.*

The cartridge extractor appears well designed; it acts on two opposite sides of the cartridge, thus getting a better hold on it than the Snider, which acts on only one side.

The action of the extracting lever has a feature which is very ingenious and effective. It is so arranged as to give its greatest power at the commencement of the extraction and its greatest velocity at the end. The advantage of this is evident: for the greatest force is exerted to start the cartridge, while after this first resistance is overcome the slightly conical shape purposely given to the chamber allows it to move easier, and then it is more important to give it a high velocity in order to jerk it clear away. The manner in which these varying effects are produced will be explained by the diagram (Plate I.)

The horizontal arm of the extracting lever is acted on by the contact of the lower side of the falling block, but this contact takes place at two alternative points. At the beginning of the extraction it acts so as to give the shortest leverage with the block and the longest with the extractor, but after moving through a certain space the point of contact changes, so as to reverse the conditions.

I have calculated the force and velocity in both positions. At the commencement of the extraction, supposing the force applied at the end of the handle to be = 100, then (neglecting friction and the resistance of the spiral spring) the force on the cartridge will be about 240 also supposing the angular velocity of the handle = 100, that of the extracting lever will be = 150. But when the cartridge has been moved through a space of about $\frac{1}{10}$th of an inch the conditions change; the force becomes reduced to 45, and the velocity increased to 800.

The action of the extractor does not begin till the handle has nearly finished its stroke, and it is principally worked by a jerk, in which, however, the changes above mentioned do not fail to tell.

C. 8.—*On the Enclosing Case.*

The arrangement by which all the machinery of the lock and breech action, except the trigger, is enclosed in a metal case, appears to me to be very beneficial in reference to compactness, strength, and protection from external injury or from dust and wet.

This, however, involves the condition that as the parts are concealed from ordinary view they must be easily taken out for examination and cleaning, and this condition is complied with. It requires a little "knack" to get the breech block out and in again, but this is soon learned, and then the operation of taking the whole action to pieces and putting it together again is quick and easy.

C. 9.—*On the Stocking.*

The question of the strength of the stocking is rather a question for experimental trial than for prejudgment. I presume that the condition of enclosing the whole breech action in a metal case must necessarily involve the separation of the wooden stock into two parts, but I do not think the continuity in the ordinary gun adds much to the strength, as the wood is so cut to pieces about the lock.

It is possible that the peresnt mode of attachment may be somewhat weak when strained flatwise, but it can be so easily strengthened either in this or in any other direction that it appears unnecessary to consider the matter further.

The three other points A B and D need very little remark.

A.—*On the Facility and Economy of Manufacture.*

This is rather a question for the authorities at Enfield, but having visited the establishment there, and seen the high degree of perfection arrived at in the processes of manufacture of small arms, I see no reason to doubt that the Martini action can be made at such an establishment with facility and accuracy, and at a reasonable cost.

B.—*On the Simplicity and Efficiency of the Breech Action generally.*

This will probably have been sufficiently dwelt on under head C.

As a whole the Martini breech action appears to me exceedingly simple and perfectly efficient, and I cannot see any reason why, with ordinary care, this efficiency should suffer by use in any climate.

The enclosing case protects the action against ex-

ternal violence; and as to internal derangement by dirt or rust, this can be guarded against by a moderate amount of examination and cleaning, which in any arm of precision must be required to a greater extent than with the old rough firelock.

D.—*On the Measure of Importance of any Defects in the Martini Action.*

This has also been anticipated under head C, but it may be worth while to recapitulate the chief points to which it would seem desirable to direct attention.

The first is the mainspring. The proper strength and range of this which will suffice to give certainty to the fire having been determined by experiment, such precautions must be adopted in the manufacture as will ensure uniformity of strength and permanence of elasticity. This is only an ordinary manufacturer's problem, and with the ability and experience to be found at Enfield, or in any of the larger gun factories, it can be easily and certainly solved. And when this uniformity and permanence are attained, from the extreme simplicity of the lock action, there would appear to be little chance of any derangement. If a spring should break a new one can be inserted in two or three minutes with the greatest ease, and at an insignificant cost.

As to the tumbler and trigger action some of its parts are rather delicately made in the specimens I have seen, and might, perhaps, suffer if forced by rough hands, when anything went wrong in the use of the arm; but they would easily admit of strengthening, and there is nothing in the nature of their action to lead to derangement. The question as to the probable wear of the bent and tumbler rest has already been remarked upon.

The motion of the block by the handle and tooth appears scarcely liable to derangement. The question of probable wear as effecting this has also been considered.

The sufficiency of the power to move the block in extraordinary cases will be settled by practical judgment as to the nature and degree of probability of such cases.

The safety-bolt and the strength of the stocking will probably receive further consideration.

There are also some minor points about the construction, such as the form and strength of screws, &c., which may perhaps be improved.

Great attention should, I think, be devoted to the facility of getting the action to pieces and putting it together again. This is not only the condition which allows the whole to be enclosed, but it is all important as regards the prevention of derangement or interruption of the action by dirt, rust, or clogging. With this view every fastening screw should be strong, perfect, and free in its action, and the parts should be so arranged as to leave no doubt or possibility of mistake in coming together. I may add my opinion that the superintendent of the Small Arms Factory would have no difficulty in meeting these requirements.

If all these things are attended to, and the parts are as well made as might be expected from the general excellence of the Enfield manufacture, I cannot, for my own part, see anything but a favourable prospect of the success of the arm.

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10. (*Chairman.*) The Committee are greatly obliged to you for the very able paper which you have put before them, and which will give everyone, whether acquainted with mechanics or not, a clear description of the working of the action in the several parts. With reference to the lightening of the pull off of the trigger, could that be done by the simple means of altering the shape of the bent as in any ordinary lock?—I believe that it could to a certain extent by altering the lower one; but I should hesitate to touch the upper one. That must be radial, the same as in the old lock. Great caution would be necessary in altering the upper bent of an ordinary lock, because it is upon the form of that that the safety of the gun, if knocked about, depends. Therefore the upper one must be retained in its horizontal position; but I have been told at Enfield that a considerable degree of range can be got by altering the lower bent. The lower bent does not come into action until the trigger is pulled, and therefore it has nothing to do with the safety of the gun. All that that does is to put a portion of the weight on an incline which enables it to slip off very easily, and I believe that by altering this incline the pull may be lightened. I have seen some rifles go off as low as at 4 lbs. or 5 lbs., and that must be done by the alteration of the lower bent.

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11. Is not the safety of a gun at full cock, with the Martini-Henry action, greater than that of a gun at full cock with the ordinary lock action?—It is, on account of the greater pressure on the bent. In the one case you have only 36 lbs. acting on the radial bent, and in the other you have 75 lbs. acting upon it. That involves greater pressure and greater safety.

12. Supposing that it should be necessary to lighten the trigger to 3 lbs. could you make the pull-off as low as 3 lbs.?—I should doubt it. It is a matter rather for the Enfield authorities than for myself, but with that pressure upon the bent I should doubt whether you could get anything approaching to what is called a hair trigger, because there must be a limit to the lightening that you can give by the lower bent.

13. With regard to the manufacture of the several parts connected with the trigger, do you consider that greater nicety of manufacture is required with the Martini lock action than with the ordinary lock action?—In some parts I do. I think that an ordinary lock action might be roughly made, and it would work tolerably well—but a Martini-Henry roughly made would not work well. At the same time it does not require more accuracy than is actually put, for some reason or other, into the ordinary locks as made at Enfield. They find it advantageous to make those with as great accuracy as the Martini-Henry requires. A rough Birmingham gunmaker might make an ordinary lock which would answer tolerably well, but a rough Birmingham gunmaker could not make this to do well.

14. With regard to the manufacture, would there be any difficulty in making the several parts of the Martini action interchangeable in the same way that the several parts of the Snider action are interchangeable?—I should think not.

15. Do you consider the facility of dismounting the lock and action of the Martini greater or less than that of the Snider lock and action?—It is at present a little more difficult on account of the knack for getting out the block, but that is very soon learned. A person accustomed to it could do it perfectly well. The men at Enfield do it in a moment. The screws which have to be undone at present involve a little more care and work than the simple taking out of the two main fastening screws to the ordinary lock, but there is nothing difficult in them, and by making the screws a little larger and more perfect it might be made easier still.

15. Is it not the case that in order to mount and dismount the ordinary lock a cramp is necessary, whereas to mount and dismount the Martini lock nothing beyond the hand is required?—I thought your question referred merely to taking the lock off. To take the whole to pieces would be a troublesome thing, as there is some precaution wanted with a cramp for the spring. In that sense the ordinary lock would be more troublesome, because it requires special appliances, whereas the Martini requires nothing but a turnscrew.

16. You see no difficulty in making the parts of the safety bolt stronger and more serviceable if it should be found necessary to do so?—I think that part requires reconsideration. I am not prepared to say how I should do it, but it is somewhat unsatisfactory at present. I do not think that any practical gunmaker, or any person connected with the establishment at Enfield, would have much difficulty in improving it.

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The parts are small, and there are other disadvantages about it, but whether it would be more advisable to re-design it or to strengthen it as it is I am hardly prepared to say.

17. A modification has been proposed in the handle for the convenience of grasping the rifle, do you see any objection to this form of handle with reference to the opening and closing of the block (*handing a rifle to the witness*)?—Not at all. As far as the working goes it appears to me to be exactly the same. There is a little more confined space to get the thumb in, but that is not a question for me, it is a question for the soldier.

19. With regard to the lever power, is that as great?—It is better, because it is longer. The application of the thumb is at a greater distance, and therefore gives more power upon the block.

20. (*Mr. Gregory.*) In comparing the delicacy of manufacture which you think is required for this arm, with the delicacy which would be required for an ordinary rifle, do you mean an ordinary muzzle-loader or a Snider?—I had reference in the remarks which I made simply to the ordinary form of lock. Speaking of the Snider as an arm entire, I have not studied this perhaps closely enough to give a positive answer to the question, but I should think that the accuracy necessary to make the Snider work well, taken as a whole, would be quite as great as to make the Martini-Henry work well. In my remarks I had simply reference to the form of the lock. I can conceive that in that Snider breech-action great accuracy is required.

21. With regard to the action of the trigger and the parts connected with it, assuming that angle at which the trigger rests upon the bent be such in the first instance as to give the proper pull, do you consider that the amount of weight which rests upon it, which is in excess of that which rests upon the similar working parts in the Snider, would be such as to cause any greater probability of derangement, and of the amount of pull becoming changed by use?—No, I do not, if the parts are hard enough to resist wear.

22. Is there any difficulty in giving that proper hardness by the original material or by case hardening?—Not at all.

23. The safety bolt somewhat corresponds, does it not, with the safety bolt which has been used in fire-arms for many years?—In principle, it does. The difference, which is rather a disadvantage as compared with the old one, is that the old one was a direct bolt with a straight action, and perfectly in sight; whereas this is an indirect kind of motion, and it is more concealed, and the parts are smaller and less accessible, but in principle it is the same.

24. Supposing that the arrangement of that lock action were entirely altered in such a way as to give more power for raising the block, or for any special purpose, would delicacy in manufacture be required equal to that which you consider would be necessary in the Martini action before you?—Yes, because it is not in that part that the delicacy is so much required. It is in the part which would remain the same in any case if the present system of spiral spring and striker be retained.

25. It seems to me that you consider the spiral spring to be of considerable value and an important feature?—I do, as giving a compactness and directness and safety to the lock action, which could not be obtained by the other form of spring, which requires the parts to be spread out more and made more indirect in their action.

26. Do you consider that such merit would to any extent compensate for the additional weight and consequent friction which may be thrown upon other parts in order to obtain the use of the spiral spring?—I do, if they are not carried to such an extent as to do any real harm.

27. I gather from your evidence that you do not consider that they are carried to such an extent as to do any real harm in the Martini action?—I do not.

28. There is of course no finality in inventions of this sort, and you have already suggested points in which you think that improvements could be made. Assuming that such minor alterations are made as would naturally and properly be made at Enfield if this arm were adopted, is it your opinion, as a whole, looking to the action mechanically, that it is one which may with propriety and safety be adopted as a good practical action; or do you think it had better be set aside and the action entirely re-studied?—Speaking as an engineer, I can give an affirmative to the first alternative, excluding of course the questions on which I am no judge.

29. You have expressed your opinion that there might possibly be some improvement considered necessary in the mode of fixing the stock. I presume that if any improvement were found desirable there are many simple ways of making that improvement?—Yes, very simple.

30. For instance, if it is thought desirable to make the bolt part and parcel of the case, and to screw it up by means of a nut, there would be no difficulty in making that change?—Not at all.

31. Again, if it were thought better to fasten the stock by straps, in the same way as the old rifle, there would be no difficulty in applying them?—Not at all. One of the points which may be found defective is the depth of the mortice or socket in which the wood stock is fixed; that may be found too shallow; but it may be increased, either entirely or partially, by putting continuations of the lock case to some extent on each side. Those things have been talked of at Enfield when I have been there, and such modifications are so obvious to a manufacturer that it is hardly necessary that I should give any opinion upon them.

32. (*Mr. Ross.*) Did I rightly understand you to say that the pull of the trigger would vary from 4 to 7 lbs. according to the amount of lubrication?—I believe it is found to vary from different causes, amongst which I suppose the amount of lubrication is the principal one, and, perhaps, some slight variations in the angle of the lower bent, but I should suppose that the state of lubrication of the surface is the principal element. Several were tried at Enfield in my presence, and I think they were found to vary from 4 to 7 lbs.

33. Do you see any reason why the variation in the Martini should be greater than in the ordinary form of lock?—I should think not. I do not know by experience what the variation may be in the ordinary lock. I should think that the variation with the state of lubrication in an ordinary lock might be as great, but I have no experience of that.

34. (*Capt. Aylmer.*) You mentioned that there were some parts in the lock action which you thought might be strengthened. Could you mention any particular parts which you think require special strengthening?—The trigger action might be strengthened. I am not prepared to say that the parts do require it, but if experience should show that it would be desirable to make them stronger they can be strengthened without the slightest difficulty, and I refer principally to the trigger action as the parts which certainly are delicate, and require accurate making. The centre pin has no fastening, it merely holds in its place by friction; I presume it has not been thought that a fastening is necessary, but if a fastening should be desirable, it is the easiest thing in the world to arrange it so. But those are matters which will be better decided by experience than by judging beforehand.

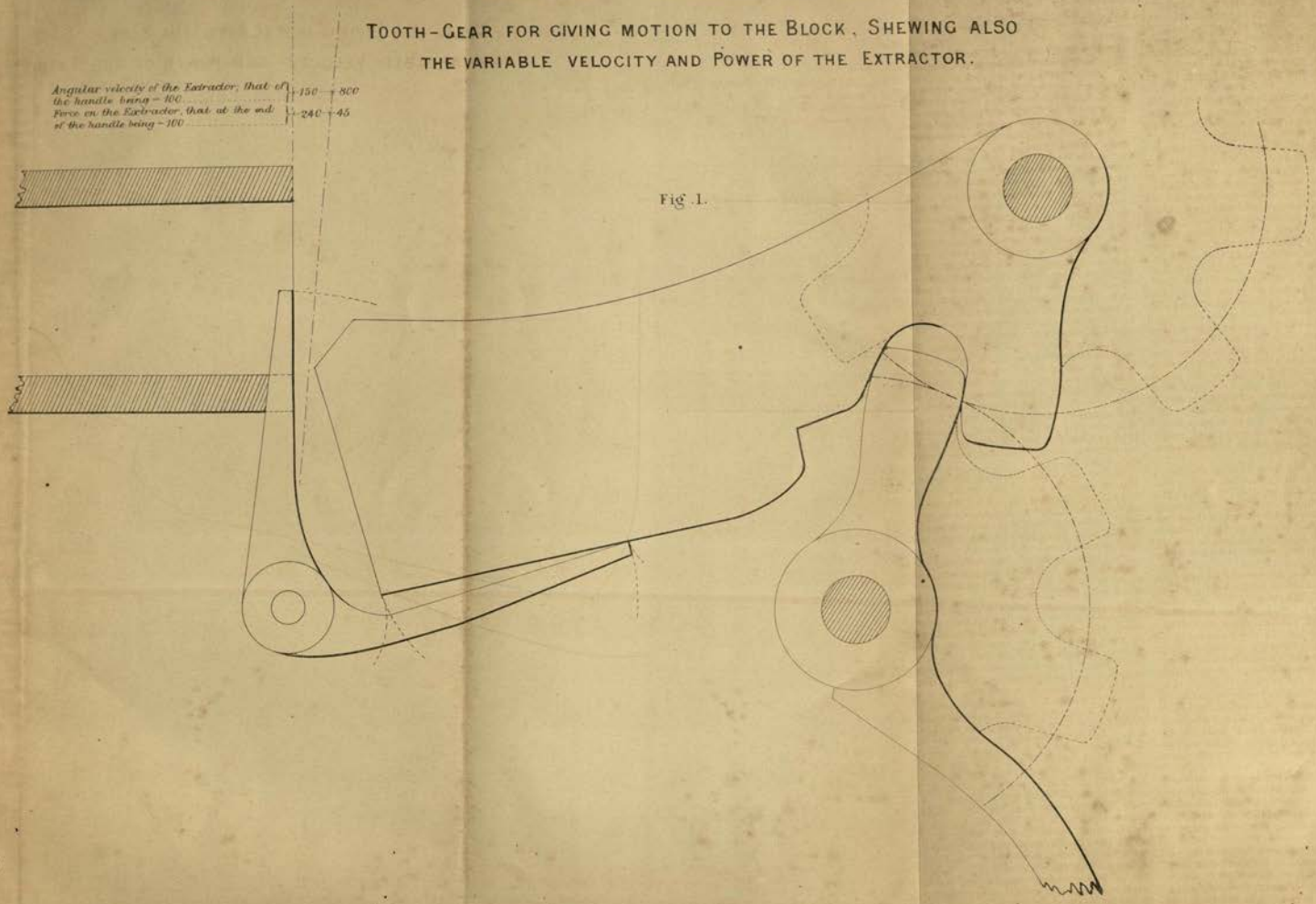
35. (*Capt. Majendie.*) I think you promised to produce those lead pins. Can you show them to us now?—Yes. (*A lead pin was produced, and the witness explained that it was uninjured.*)

36. With regard to that new lever which I think you were looking at just now you say that you get more power owing to the lever being longer, do you get the same velocity at the end of the stroke for the extraction; in other words would it be likely to jerk out the cartridge as completely as the other one?—No; for in proportion as you get more power you get less velocity, and you would lose therefore in velocity by the position of the thumb being further away.

To illustrate Mr Poles Evidence

MARTINI – HENRY RIFLE.

TOOTH-GEAR FOR GIVING MOTION TO THE BLOCK, SHEWING ALSO THE VARIABLE VELOCITY AND POWER OF THE EXTRACTOR.



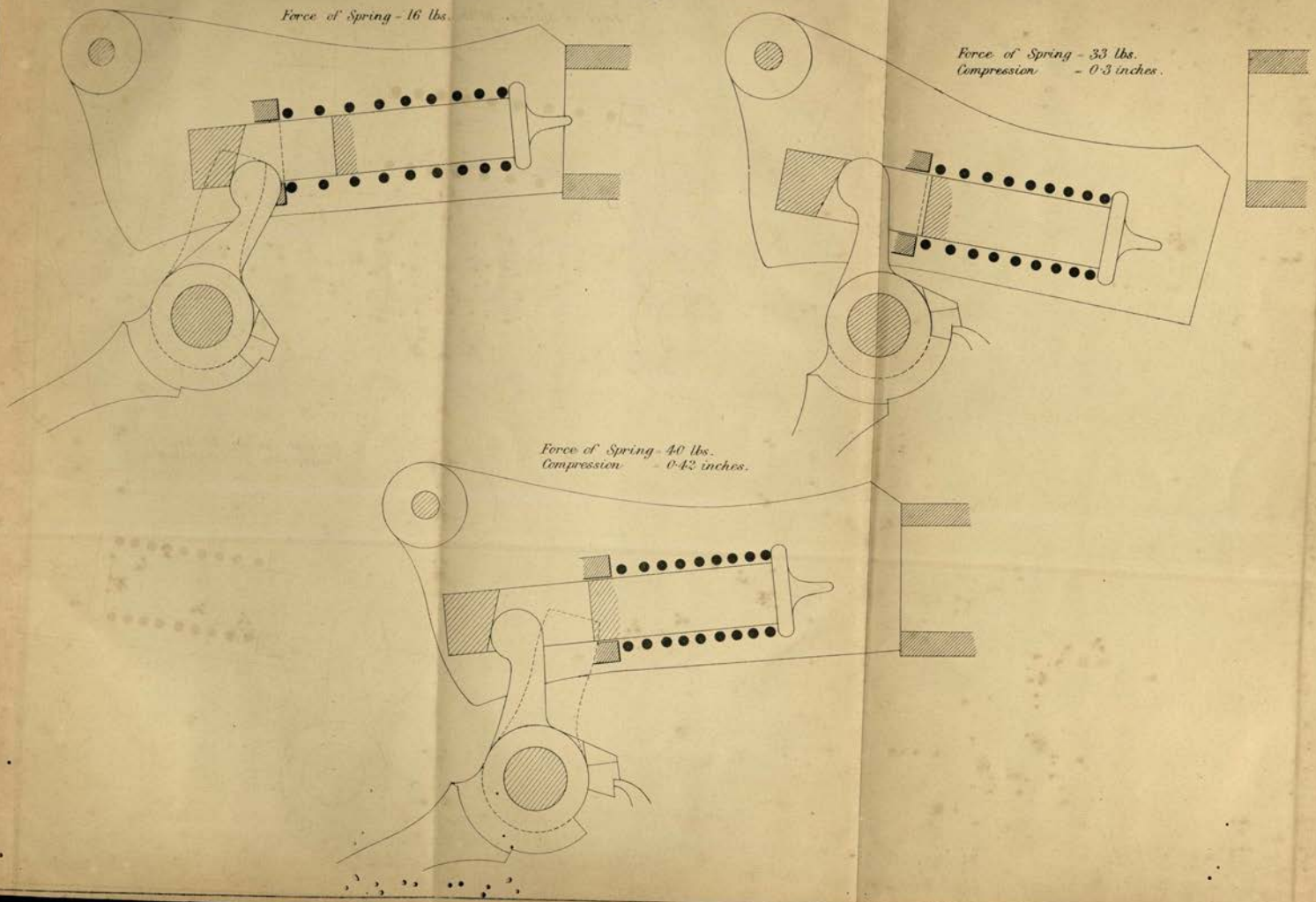
Vincent Brooks, Day & Son Lith.

To illustrate Mr Peles Evidence.

MARTINI - HENRY RIFLE.

PROCESS OF COCKING.

Fig. 2.



MARTINI—HENRY RIFLE.

TRIGGER ACTION.

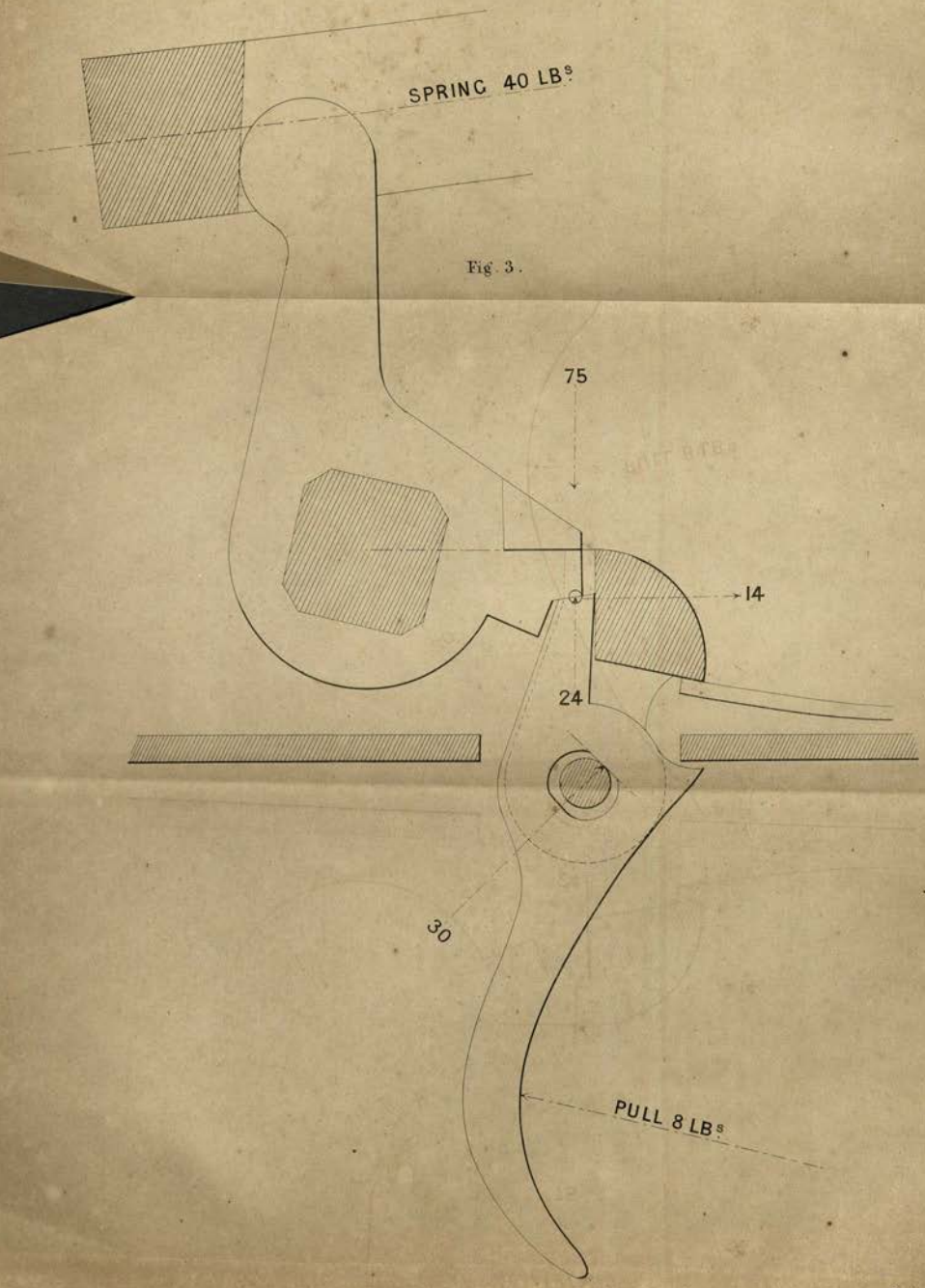
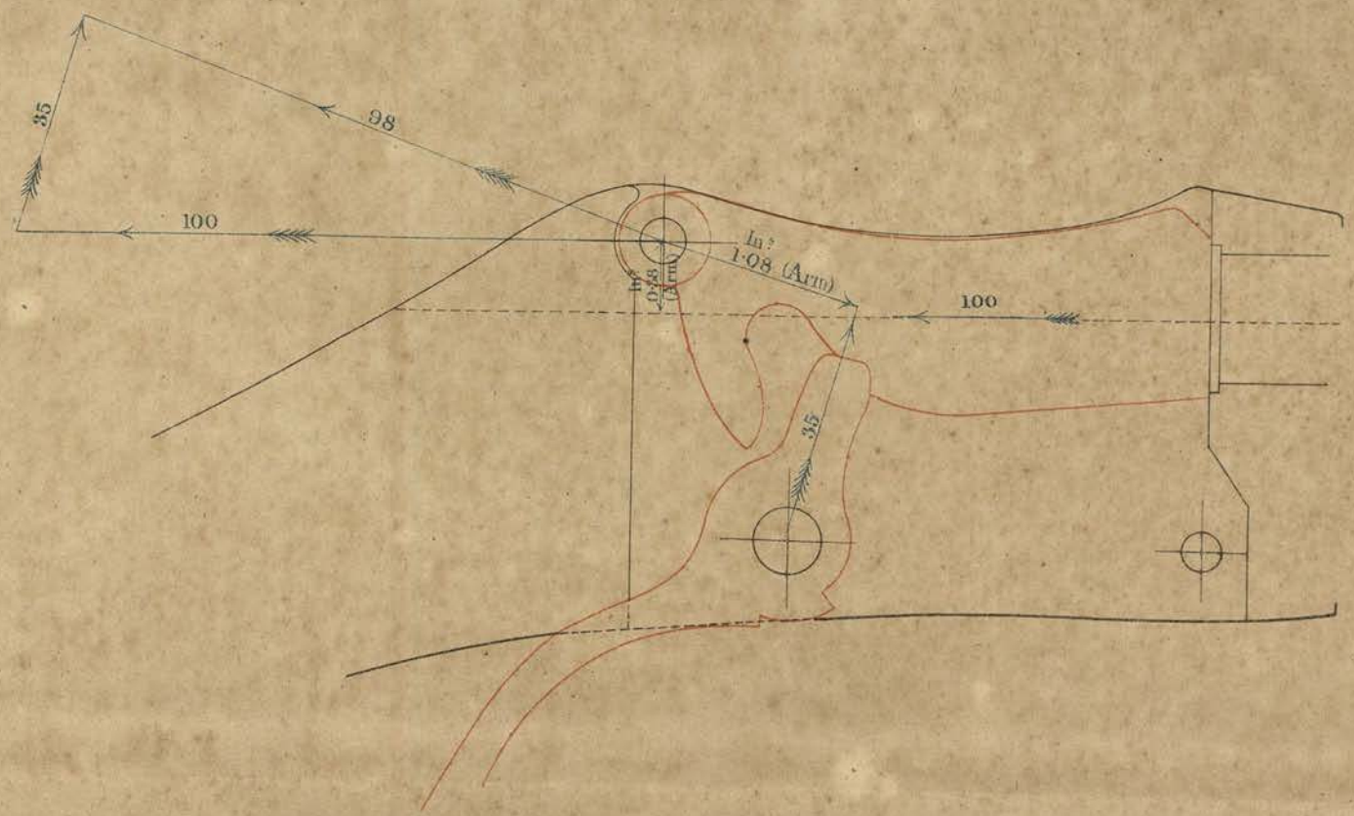


Diagram No 1.

MARTINI-HENRY RIFLE.



To illustrate Mr Woods Evidence.

Vincent Brooks Day & Son, Lith.

37. Could the pull-off of the trigger be more accurately adjusted than from 4 lbs. to 7 lbs. ?—I do not know; that is a question for the manufacturers.

38. (*Major Haig.*) With reference to C. 3, the working lever, you stated that if the tooth end was moved further towards the front of the breech block, it would exert greater force, but that greater power was not required; would not it be absolutely a disadvantage to move it if greater power was not required—would not the main handle have to work through a greater angle, in fact, to produce the necessary motion?—I am not sure. It is possible that the main handle might be altogether differently arranged.

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The witness withdrew.

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39. (*Chairman.*) You are a member, are you not, of the Council of the Institution of Civil Engineers?—I am.

40. And you have, of course, had very extensive and varied experience in mechanical engineering?—Yes, I have had experience for the last 35 years.

41. I presume that you have had before you the programme for the examination of witnesses on the mechanical construction of the Martini action?—Yes, I have had that before me.

42. Would you wish to bring before the Committee a written statement in connexion with this programme, or would you prefer that the Committee should ask you questions upon it?—I have prepared a written statement, and perhaps it might facilitate the expression of my views if I read it, and I shall be very happy to answer any questions that may arise upon it.

43. Will you be so good as to read it to the Committee?

Letter A.

Having carefully examined the breech action, and having seen the machinery and appliances at the Small Arms Factory at Enfield for the manufacture of breech actions, I am of opinion that the Martini-Henry rifle breech action can be manufactured with facility and economy by machinery properly arranged for the purpose, whether at the Government Small Arms Factory or any higher class private factory.

Letter B.

My examination of the mechanical character of the various parts as applied under the head C, and my investigations at the Small Arms Factory, Enfield, (the opportunity for which was kindly afforded by Colonel Dixon), have led me to the conclusion that the Martini breech action generally is of a very simple and efficient character, and that such action if introduced in rifles properly manufactured will do its work in all climates with safety and regularity.

Letter C.

1. *Falling Block.*

The falling block is of simple construction affording great facility for the introduction of the cartridge, and is in itself sufficiently strong for transmitting the pressure on to its joint and support.

The principal part of the pressure produced by the explosion of the charge is transferred to the joint at the back, such joint being composed of the rounded end of block as an axis, and the corresponding socket in the "body" or case; in combination with the "block axis pin" and the holes in which this is inserted. The pressure is mainly taken by the knuckle joint, the fit of the pin being purposely made a little slack.

Taking the force of the recoil as 100 acting in the line of axis of the barrel, and measuring the moments round the joint of the block (see Plate IV.), I find the resultant pressure acting on the joint of the block to be represented by 98, such pressure being transmitted in a line inclined 20½ degrees to the axis of the barrel, and passing within the surfaces of the knuckle joint. Hence ample provision is afforded, irrespectively of the block axis pin, and irrespectively of the friction of the parts, for resisting the tendency of the pressure to force the knuckle end of the block out of its socket. I consider that adequate support is afforded to the block by the short arm of the lever below it.

C. 2. The Spiral Spring and Striker.

The action of the spring and striker is calculated to give an adequate and uniform blow to the cap. Spiral springs of the required strength and dimensions are, if made of proper material, and when adjusted for permanent set, as little liable to fracture or to lose power by use as are springs of any other form, provided they can be kept from rusting.

The spiral spring is effective in striking the sharp, quick, blow wanted for ignition of the cap, and can by trials be readily adjusted to produce such blow, the effect in this respect being analogous to that of the ordinary lock spring, inasmuch as the force of the spiral spring imparted to the striker throughout its "stroke" (of ·42 inches) is engaged in the production of accelerated motion and storing up of "*vis viva*" to be momentarily expended in the blow on the cap. A pressure ranging from 40 lbs. to 18 lbs. appears to be sufficient.

The concentric combination of spiral spring and striker, the one within the other, and both within the cylinder of the block, is a simple and compact arrangement, affording the parts protection from dust and dirt. Thus inclosed it would seem probable that the usual periodical ovrhaul and cleansing of the "action" would suffice to keep it in good working order.

A spiral spring is more likely to have its power impaired by rust than an ordinary spring, on account of the large surface of metal exposed compared with the weight of the material. The plunger of the striker being guided by the cylinders in which it works, the striking point is directed accurately into and through the hole in the block face, and therefore cannot fail to hit the centre of the cartridge, assuming the block to be brought up to its true place.

The motion of the striker in a straight line admits of great strength being given to the block face, as an increase in length given to the hole (determined by the requisite thickness of the face plate), does not affect the action of the striker, whilst it increases the strength of the block to withstand the pressure, and conduces to prevent enlargement of the hole.

C. 3. The Working Lever.

The working lever possesses adequate strength for the performance of its various functions, viz., lowering, raising, and supporting the block, cocking the rifle as the block falls and rises, and working the extractor.

Taking the force of the recoil (as before) at 100, (see plate IV.,) and measuring the moments round the joint of the block, the abstract pressure on the end of the lever acting in a line drawn from the middle of its end through the centre of its axis pin is represented by 35, assuming there to be no friction. When the block is up to its place for firing, the short arm of lever is subject only to a compressive strain, and consequently the pressure is transmitted through it without inducing a transverse strain and in the most favourable manner for preventing injury to the fibre of the iron, whilst the pressure passing from the lever arm to the "body" is conveyed into a strong and well-supported centre pin.

The friction produced by the jamming of the cartridge case after explosion, added to that occasioned by the pressure of the block on its axis of motion, must materially reduce the downward pressure on the lever arm.

That such is in fact the case was amply proved by experiments which I witnessed at Enfield on the 2nd

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of January 1871, in company with Colonel Dixon, Professor Pole, and Mr. Nasmyth, when the Martini-Henry rifle was fired off several times in succession after removing the block axis pin altogether and substituting a lead pin for the steel pin of the lever axis, and filing away the top part of the socket of the block joint to a surface at right angles to the axis of the barrel. Under these circumstances the gun was fired without causing any disturbance of the block, and without producing any sensible impression on the lead pin.

The point of greatest wear is the *edge* of the tooth or cam which operates on the inclined curved surface of the block in raising the same; but the parts of the surfaces of the tooth and the block on which the accuracy in keeping the block up to its place depends, are seen to be subject to very little wear and tear, the work of lifting the block having been done *before* the flat end of the lever arm slips into its place of rest under the corresponding ledge in the block.

If the working parts are well case hardened there is every reason to believe that the lever will be likely to continue to do its work properly in all respects. A Martini-Henry rifle, which was said to have been fired 30,000 times,* was submitted at Enfield to our inspection. The action was taken to pieces in our presence (January 2nd, 1871) and on submitting them to the standard gauges no sensible wear could be detected.

The compression of the main spring is effected by two movements of the lever, viz., those which are incidental, first, to the lowering, and secondly, to the raising of the block; the last operation simultaneously placing the gun at full cock.

C. 4. *The Centre Pin of Lever, Tumbler, and Indicator.*

This is a strong pin, and I see no objection to placing the lever, tumbler, and indicator to work upon it. By such combination a simple, compact, and I consider, durable arrangement of parts is effected, enabling several important movements to be accomplished by one pull of the hand.

The action of the indicator being a direct function of that of the lever and tumbler, all being connected with the same shaft or pin, it cannot fail to indicate correctly, whether to sight or touch, the state in which the gun is as to being cocked or otherwise.

C. 5. *The Tumbler, Sear, and Trigger.*

The tumbler, sear, and trigger may in their combined action be rendered safe and strong, and appear to be capable of adjustment on their bearing surfaces to any desired pull, say, within the prescribed limits of from 6 lbs. to 8 lbs.

The retention in use of a steady pull will depend on the maintenance of uniform power in the main spring, on the durability of the engaging surfaces, viz., the noses and rests, and on the good fitting of the axis, holes, and pin.

The original adjustment of the trigger with its oval hole for the axis pin, in its connexion with and relation to the tumbler, is one of some delicacy requiring great accuracy in the construction, but this once effected the mechanism may be expected to be efficient and durable. It would contribute to durability if the axis pin of the trigger were made of greater diameter.

C. 6. *The Safety Bolt.*

I am of opinion that the locking bolt, with its thumb piece, screw, and spring, is of somewhat too delicate a construction, and that in ordinary use and when the parts are clogged with oil or dust, the bolt may be liable to stick. Such will most likely be the case if the soldier should not be in the habit of systematically using the locking bolt.

C. 7. *The Cartridge Extractor.*

The form and application of the extractor seems to leave nothing to be desired. The double blow struck on the lower arm of the bent lever by the descending block, first at the long leverage, giving great power to draw the cartridge case; and secondly, at the short leverage, giving velocity and consequently a sharp jerk to the loosened cartridge case, serving to throw it completely out, is eminently effective.

C. 8. *The Closed Metal Case.*

I am of opinion that the closed case affords great strength and stability to the parts of the breech action, making this, so to speak, a self-contained piece of mechanism, and tending to promote its durability. Doubtless, dust and damp will find their way into the case, but experience alone can determine whether to an extent likely to cause failures in firing. The rubbing surfaces will, to a great extent, keep themselves clean by use, and there is plenty of room within the case for the dirt thus thrown off the working parts to rest quietly until it is removed at the ordinary periods for overhauling the action.

C. 9. *The Mode of Stocking.*

In principle I see no objection to the divided stock, whatever objection there may be attaching to the mode of fixing the butt end to the body of the breech action. The fixing of this certainly appeared at first sight rather weak. When at Enfield on the 29th of December last I witnessed some trials made by Colonel Dixon to determine the relative strengths of the Martini-Henry and Snider stocks, and will describe the results. The muzzle end was placed in a ferule swivelling on a pivot, the gun was elevated and allowed to descend through a space of 4 feet 5½ inches, and to fall upon a cast-iron anvil plate, supported on a wooden block below. The guns which we tried were a Martini-Henry rifle which had been returned from Canada, and an ordinary Snider, which Colonel Dixon provided. The blow produced no disturbance of the stock in either case. We tried the locks afterwards, and they worked perfectly free, and in fact no damage was apparent to either, with the exception of a little bruise on the edge of the end of the butt. These trials, as far as they went, showed the Martini-Henry stocking to be as strong as that of the Snider. The Snider stock afterwards proved to be weak at the point where the lock is inserted, so much of the substance of the wood being there removed.

I would here explain another experiment which Colonel Dixon made, using each arm as a sort of club, and dashing the butt end against a wooden block. In both cases he broke the stocks with apparently equal blows as far as one could judge by the effort which he appeared to put into his blows. The Martini-Henry broke first through the "hand" or small part of the stock, one of the fractures commencing at the point where the head of the bolt was screwed up against the washer, and another fracture commencing at the insertion of the lever catch. Upon the second trial of the Martini-Henry, the butt came out of the socket altogether, the steel bolt having broken short off through the screw just at the place where it screwed into the boss. The Snider broke to pieces through the lock, in fact, the whole of the wood was crushed through the lock. The Snider stock thus proved to be very weak at the point where the lock is inserted, so much of the substance of the wood being there removed. The Martini-Henry gave way either in the "hand" of the stock, by the wood breaking across, or by the butt coming out of its socket through the fracture of the bolt.

That completes my observations on mechanical construction and the only further observation which I have put down is this, and in reference to letter D., that the defects which I have noticed in commenting upon the mechanical character of the various parts or defects of detail, being neither inherent in, nor inseparable from, the Martini-Henry action, appear to

* This rifle had probably fired 10,000, not 30,000 rounds.

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me to be capable of correction without material change of design.

44. (*Chairman.*) The statement which you have just read enters so carefully into all the questions and answers them so fully that it leaves very little for the Committee to examine you upon; but there are just one or two points on which I should like to ask you a question. Is there any difficulty in adjusting the spiral spring to the permanent set?—There is no difficulty in adjusting the spiral spring to the permanent set. The arrangement would be simply this, that if you determine that 40 lbs. should be the amount of the recoil, you would construct the spring so that at the first start it would, perhaps, indicate 2 or 3 lbs. more, as would be determined by experiment. The spring would be made a little stronger to begin with, to allow for the set, which would take place in use.

45. But the set having once been determined, hardly any amount of use would make it variable?—I think not. From all my experience in spiral springs, I think the action would be equal and uniform afterwards.

46. You stated, I believe, that the spiral spring is more liable to foul from rust than the ordinary main spring of a lock?—I said so because of the thinness of the wire. In the case of the spiral spring the tension of the spring is equal through every part; whereas in the case of the ordinary main spring the tension is much greater at one part than at another; and at that part the thickness of the metal is very considerable with reference to the power of the spring, rendering the effect of a little rust upon it of less consequence.

47. Do you consider that a spiral spring will be equally able to resist the great variations of temperature which might affect metal?—I think so. I do not think that they would affect it materially.

48. With regard to the ordinary liability to rust, do you consider that the Martini action is sufficiently protected to guard against it?—Yes, I think so.

49. (*Major Haig.*) Do you think that the pull of the trigger could be adjusted very fine, if it is necessary?—I think that it could be adjusted between the limits that I have been given to understand are the allowed limits, namely, between 6 lbs. and 8 lbs.

50. But not finer than 6 lbs. you think?—I should doubt it.

51. (*Captain Majendie.*) From the experiments which you mentioned with regard to the strength of the stock, do you gather that the Martini stock, as now arranged, is weaker than the Snider Enfield stock, as now arranged?—No, I gather that they are about equal; but I think that the strength of the Martini-Henry might be improved by a little alteration in the arrangement. I think there might be a somewhat deeper socket, and perhaps a different arrangement of the screw; that is to say, a different material in the screw. The screws that broke were very hard steel, and I am of opinion that if a milder and more ductile steel were used, it would have more strength. The part of the stock which has proved to be the weakest, might there be strengthened by reducing the size of the hole, through which the bolt is inserted. The size of the hole is determined by the size of the head of the bolt, and I think that the head might be reduced with advantage, and the hole consequently also.

52. In fact you think that if those alterations were carried out, the divided stock would be stronger than the existing service Snider stock?—I think it would. For my own part, I was very much surprised to find that the Snider stock broke so easily.

53. You have spoken of the spiral spring being rather more liable to be affected by rust, do you consider that that liability exists to an extent which would render it unwise to introduce that spring for military purposes?—No; I should have no hesitation in using it for the purpose.

54. (*Captain Aylmer.*) With regard to your remarks on C. 5, you mentioned the tumbler, sear, and trigger, and you said, did you not, that they *may* be rendered safe and strong?—I used this expression as considering the axis pin a little weak. My words are, "The tumbler, sear, and trigger, may in their "combined action be rendered safe and strong, and "appear to be capable of adjustment on their bearing "surfaces to any desired pull, say within the prescribed "limits of from 6lbs. to 8lbs."

55. Do you think that they are not safe and strong now when you say that they may be rendered so?—I added at the foot, the remark that it would contribute to durability if the axis pin were made of greater strength, and that qualification referred to the opinion which I expressed, that the trigger axis pin was rather too small for its work.

56. (*Mr. Gregory.*) You observed that this form of the spiral spring from having a larger amount of surface in proportion to its weight, would be more likely to lose power by rust; that answer I think you subsequently modified to some extent as regards the practical application of it by your observation that the spiral spring in its action is doubly protected, not only by the outer case but by the inside of the falling block?—Yes.

57. Assuming that a straight spring was used and not within that case but simply let in in an opening in the wood of the stock, on which side would the balance of the probability of duration be, in the spiral spring applied as in the Martini action, or in a straight spring not equally protected but simply placed in a hollow in the wood of the stock?—I should say that the chances would be about equal because in the case of the Snider the lock is pretty well protected by its insertion into the stock. It is a very close insertion and therefore there is not much opportunity for damp to get into it, perhaps not so much opportunity as there is to get into the case of the Martini-Henry, but the spiral spring in the Martini-Henry is contained in a second case, and is therefore better protected than the other parts contained in that case.

58. (*Lord Elcho.*) You stated, did you not, that you thought the safety bolt might be liable to stick if dirty, or if not much used?—Yes, I think so.

59. Do you think that the defect which you find existing in the bolt according to your opinion could be easily remedied?—I should think so, and some very simple mechanical contrivance, I think, might be adopted as a substitute for it if it were found to be defective in practice, as I think it may be.

60. (*Chairman.*) Have you seen any reports of trials?—Yes. (*Chairman.*) From the accounts which have already been returned there have been no complaints as to the efficiency of the safety bolt, and even where the rifle had been very much knocked about, I do not think there is a single instance in which there has been a complaint of the safety bolt being out of order.

61. (*Lord Elcho.*) There is another form of the handle of the lever (*showing the same to the witness*). Do you think that that would be likely to act as well as the other (*handing another rifle to the witness*)? If the stocks, lock furniture, and barrels of ordinary guns are attached or coupled by straps and not by a pin in the centre of the stock, as this is, might not this stock be, perhaps, even more strongly attached in the same way, without a pin, by straps above and below, and by a projection which has been suggested by Dr. Pole on each side of the lock plate?—I think that a projection on each side would contribute very greatly to increase the strength of the stock.

62. And there might be in this case a strap below and another above, might there not?—Yes, there might. The only objection that I should have to the introduction of the strap would be the insertion of a bolt through to connect the two straps, and it is undesirable to increase the number of holes through the gun.

63. My question had in view the doing away with the hollowing of the stock and the pin altogether?—In that case, I think, you would require some means of drawing the butt end into the case by a cotter, some

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wedge-like action, so as to draw it further up into the case, and a simple transverse bolt would not have that effect. The present screw pin acts to draw and hold the butt forcibly into the socket.

64. (*Chairman.*) With regard to the divided stock, would it be cheaper or dearer than the whole stock?—I should think it would be cheaper.

65. I presume on account of manufacturers being able to use smaller pieces of wood?—Yes.

66. With reference to the several parts of the breech action, would there be any difficulty in making them interchangeable?—None at all.

67. No more difficulty than there is in making the parts of the Snider interchangeable?—No more difficulty at all. These before me are the parts of a Martini-Henry action, which has done a great deal of work. Colonel Dixon was requested to have them sent up for the Committee to see to-day. I tried them into the gauges yesterday, and found that they fitted perfectly. There appeared to be no wear in any of these.

68. (*Mr. Ross.*) Are these the parts of the rifle* which fired 30,000 rounds?—Yes, so I am informed.

69. (*Captain Majendie.*) With regard to the comparative difficulty of dismounting, that is to say of taking to pieces all the parts of the Martini-Henry rifle, and of cleaning it, and of taking to pieces the lock and the parts of the Snider rifle, do you think that the Martini-Henry would be more or less difficult?—I think it would be less difficult—it comes to pieces very easily indeed.

70. Do you see anything in the operation of taking to pieces, which could not be performed by a man after a little instruction?—No, if he is well instructed, I should think none. I do not know whether it is expected that a private soldier should take a lock to pieces, and that every man should clean his own arm.

71. Do you think that a private soldier could take it to pieces?—I think that an intelligent private soldier could if he is trained to it.

* This rifle had probably fired 10,000, not 30,000 rounds.

The witness withdrew.

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72. (*Chairman.*) I believe you have been engaged for many years in connexion with mechanical engineering?—Yes, for upwards of 40 years.

73. In fact, you are the inventor of the steam hammer?—Yes.

74. Have you not also had a great deal to do with the making of machinery?—Yes.

75. I presume you have looked at the programme for the examination of witnesses on the mechanical construction of the Martini-Henry rifle?—I have.

76. Have you prepared a paper in answer to any of the questions?—Yes; they are rather laconic answers to the various questions, but I daresay they suggest subjects for extension if it may appear desirable to the Committee to question me further.

77. Will you be so good as to read the paper to the Committee, and you can enlarge upon any portions of it to which you wish to draw particular attention, and the Committee will also have an opportunity of examining you upon any portions of it?—Yes. I shall be happy to do so.

My answer to Question A. is this: All the parts of the Martini-Henry rifle, as submitted to my inspection, appear to me capable of being manufactured by appropriate machinery with as great economy and with as small an amount of hand-work, fitting, and special adjustment of parts as in the case of the Enfield or other rifles as made at the Government Small Arms factory or any other first-class manufactory.

Upon Question B. my answer is: Taken as a whole I consider the general construction and details of the Martini-Henry rifle to be simple and efficient, and likely to perform the required duty in all climates with durability, safety, and regularity.

On Question C. I say: As to the mechanical character of the various parts, they are in themselves of an ordinary nature, and are likely to perform their respective functions in an effective and durable manner. What I mean by ordinary nature is, that there is no absolute novelty in the mechanical details; they are all well understood forms and parts, and there is nothing very special in them.

With regard to question C. 1, I reply: The form and arrangement of the falling block I consider to well adapted to resist the explosion of the charge without any undue or destructive strain on any of the joints. The position of the falling block when subjected to the action of explosion is most favourable to its capability of resisting its violence. The recoil of the falling block is transferred to the general body of the rifle at the hinge joint at the rear end, where it abuts on to a corresponding recess in the breech action box, from whence the recoil is transferred to the entire mass of the rifle in the most favourable manner for the safe absorption of the recoil by the inertia of the rifle. The hinge or joint pin at the rear end of the falling block is purposely fitted loose so as to save it from any direct or destructive action by the immediate violence of the explosion. The substantial and intimate union of the breech action box with the barrel and other parts of the rifle brings the entire inertia of the mass of the rifle into play, and so renders the concussion practically harmless to the general structure of the rifle.

With regard to C. 2: I am of opinion that the spiral spring and striker may be confidently relied on to perform their respective duties effectually and permanently.

My reply to question C. 3: is this: So far as I am capable of judging, the working lever is placed in a suitable and convenient position, and has at the same time ample power for performing the duties assigned to it, and with every reasonable probability of doing so without undue wear and tear.

With regard to C. 4: I see no practical objection against employing the centre pin of the working lever to serve the combined purposes referred to in this question. The permanence of the parts it actuates and their efficient action are not interfered with by the combination in question, while simplicity is enhanced.

As to question C. 5: I consider that the tumbler, sear, and trigger are sufficiently strong for the durable performance of their respective functions.

To question C. 6 my answer is: The safety bolt appears to perform its duty in a satisfactory manner, but I consider that some improvement may be made in it as regards the substantiality of some of its details, so as to secure durability and faithfulness of action.

To question C. 7 my answer is: The cartridge extractor appears to me to perform its functions with certainty and durability.

With regard to C. 8: I consider that the mode in which the parts of the breech action of the Martini-Henry rifle, are enclosed in a metal case, while securing their efficient action, at the same time importantly contributes to their preservation from the injurious action of dust, wet, or other causes of derangement or decay, while it affords a simple and substantial means of preserving the exact relative position of the parts, and yet presents no undue difficulty to their inspection when such may become desirable.

With regard to C. 9 my answer is: The mode of stocking appears to me to be at once simple and effective; if, however, any increase in the depth of the socket in the rear of the breech action box could without inconvenience be made, it would materially add to the firmness of the hold of the stock when subject to violence. It would also, with this object

in view, be well to make the bolt head hole in the body of the stock as small in diameter as possible.

As respects question D.: I do not see any special cause to anticipate undue deterioration of the parts of the Martini-Henry rifle, with the exception of the doubtful substantiality of the parts of the safety bolt as referred to in answer to No. 6. All its parts and details appear to me to be well contrived and adapted to the performance of their respective functions and to be easily get-at-able for inspection, cleaning, and repairs, or substitution of new parts when such may become requisite. With due care in the selection and treatment of the best class of materials wrought into form by the aid of those mechanical means by which accuracy and identity of corresponding parts is secured, I consider the Martini-Henry rifle as submitted to me, to be likely to yield in all respects permanent and satisfactory results.

78. (*Chairman.*) The paper which you have read is most concise and gives very clear information to the Committee on all the subjects contained in the questions. Would you wish to enlarge upon particular parts of that paper?—I should be most happy to enlarge upon any parts on which I have not been sufficiently explicit; any questions that the members of the Committee may think fit to put to me might suggest further explanations upon the subject.

79. With respect to the spiral spring do you consider that the spiral spring is equally durable with the flat spring?—I should say more so, because steel wire when coiled into the form of a spiral spring, hardened and duly tempered, is more likely to be free from cracks or flaws than in the case of a steel forging of such a form as the ordinary gun-lock spring; and again, the strain in the case of the spiral spring is spread over a comparatively great length of material. I have had considerable acquaintance with the employment of spiral springs in machinery. I saw yesterday a very remarkable instance of the durability of spiral springs in the case of what is called Ryder's forging machine that they have at Enfield. It is a machine that forges certain parts of the Enfield rifles by the rapid vibration of stampers worked by eccentrics revolving at a very high speed. Each of those machines operates upon spiral springs that are placed in connexion with these stampers to the extent of nearly 300,000 expansions and compressions every eight hours, that is to say, 300,000 violent compressions and violent expansions take place every eight hours of the day, and there they have been at work nearly 10 years without the slightest deterioration to the spiral springs; so that this may be taken as conclusive with respect to the durability of spiral springs.

80. There is, I understand, no difficulty in getting a uniform blow with the spiral spring?—I think a spiral spring is quite trustworthy for such purposes. At the first out-set of the use of a spiral spring you might find that if it was originally designed to support 40 lbs., it might settle down and ultimately indicate 38 lbs., but it would be very easy to arrange for that. In the first action of a spring, what we call a permanent set always takes place; it then comes to its normal condition after a few expansions and contractions, and it might be necessary in that case, if you wanted a really effective 38 lbs. spring to make it a 40 lbs. spring to set out with, so as to give it a little margin of power.

81. (*Lord Elcho.*) Is the spiral spring to which you have just referred in that forging machine at Enfield of the same substance and length as in the Martini?—No, it is considerably stouter, and it is all the worse for the spring on that account, it being made more rigid, the action upon each individual part is more excessive; it is safer to bend a thin piece of metal frequently than to bend a thick piece of metal frequently. The thicker and stronger a spiral spring is made I should apprehend, the more likely it would be to give way under any undue strain, but I have the most perfect confidence in the application of the spiral spring in the case in question. I think it is the least doubtful part of the Martini-Henry rifle; in fact, I have no suspicion of any of them.

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82. Then do you think that the system of igniting a cap by a spiral spring, is upon the whole, preferable to the system which has hitherto been in use in guns with an ordinary spring?—I think the spiral spring is more trustworthy, and that it will continue to do its duty with efficiency.

83. Is it less liable to fracture?—Yes, I think so, as compared to the ordinary flat gun spring.

84. And more easily repaired?—Very much more easily, and vastly less costly as a halfpenny is to a shilling, I believe. They can be produced for about a halfpenny a piece, and an ordinary gun-lock spring about a shilling a piece. I may state that I had an opportunity of examining carefully all the details of a rifle which Colonel Dixon showed me yesterday at Enfield that has gone through upwards of 30,000* rounds; on applying the parts to the original gauges the deterioration is imperceptible. There is a slight smoothing where the parts have been in action just as one would expect, rather improving their action than otherwise, because they have become burnished, but there is no waste of material of a deteriorative kind, they are all in exact agreement with their gauges and fit most perfectly after that enormous number of rounds; they speak for themselves. A more satisfactory and convincing proof of durability I could not, as a mechanic, possibly appeal to.

85. With regard to the safety bolt you said that you thought it might possibly be improved?—I think it is the only part of the rifle that appears to me a little short of substantiality in some of its details, but it is very trifling.

86. Is it simply that it is defective in substance?—Yes, it is defective in substance. There is a small screw that combines the forcing part with the sliding part interiorly, and that I think is rather too minute and delicate.

87. The strengthening of that pin would not, I presume, weaken any other part?—Not in the slightest degree.

88. Have you any other suggestion to make with reference to strengthening the stocking further than that the socket should be deepened?—No.

89. I think you likewise said that the pin should be as small as possible?—No, not the pin but the hole in the stock, for the head of the stock bolt. There is a large head to the bolt, and in order to leave room for that large head they have bored in some cases the hole very considerably larger than is necessary to accommodate that head, and I would recommend the head to be reduced to its minimum, so that you might conserve as much of the original strength in the material of the stock as possible. Colonel Dixon put the strength of the Enfield stock, as compared with the Martini stock, to a severe test by causing each to fall from a definite height on to a metal block. The Enfield went at one blow, and broke across the lock part, where it is so very much dissected, in order to give room for the lock of the usual Enfield and Snider action, but when the same blow was applied to the Martini, it simply bent the stock a little, and in another case when the blow was still heavier, it broke off thus (*describing the same*) from weakening this part of the stock by boring a big hole to let the head of the bolt in. It was made much larger than necessary, in order to convert the stock bolt hole into a sort of tool box. I think if that hole was reduced to the minimum, it would be to the advantage of the strength of the butt when strained in an unusual manner. Sometimes I believe rifles are used in close actions, as clubs, and I think that it would provide a margin of strength for any such extraordinary action.

90. You would retain the same strength of bolt, but have a smaller head?—Yes; and I would beg to suggest that the pin be made of the toughest kind of steel, but not hardened in any way. The pins which I saw, that had been broken, were broken short in conse-

* This rifle had probably fired 10,000, not 30,000 rounds.

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quence of the hardening of the steel; the steel was hardened and then tempered, which is a modification of the original hardness, but there seemed to be too much hardness still left, and an increase of toughness at the expense of hardness would have been very desirable.

91. Do you think that you could get an equally strong attachment by doing away with the pin and having straps attached ?—I think you might in some respects, though I admire the simplicity in the mode of attaching the butt. I think that in general uses it would be found quite effective, particularly with a slight increase in the depth of the socket, if it could be deepened as far as convenience would allow it, would very materially enhance the strength of that part of the rifle.

92. The practical result has been shown to be that with its present attachment it is stronger than the Snider Enfield ?—Yes, it is.

93. Should you come to that conclusion without a practical test, merely from examining the two ?—Yes. I think anyone who is accustomed to consider the strength of materials as affected by the forms that they are put into to admit of the work that they have to perform, would see at once where the point of greatest weakness was, and that is from the extreme excavation that takes place in the body of the material in the Enfield stock to accommodate the lock and its details. When you have struck a rifle and actually broken it through at those parts, and you look at the cross section, you find there is very little of the original substance of the wood left. In the Martini-Henry, that part where the lock action is placed is in a very strong metal box, and there is no chance of that giving way.

94. Have you turned your attention at all to the question of the pull-off, as to whether a lighter pull could be got than 6 or 8 lbs. without injury to the parts of the rifle, without rendering it too liable to go off accidentally ?—I think wherever you decrease the power of the pull-off the danger of accidentally going off must be naturally enhanced.

95. That is the case with all rifles; but do you suppose that this pull-off could be reduced without rendering it more dangerous and less effective than another gun ?—Yes; I think you have a large margin of safety at present. Whether you could discount a little of it to get lightness of pull I do not know; I think you might, but I have not gone into that question.

96. But you think it might be lightened ?—I think it might.

97. Will you look at this gun, which has a different form of handle or lever (*showing a gun to the witness*), and will you state whether you think it will work as efficiently as the one you have before you ?—Yes, I think it gives better grasping accommodation. In Martini's this loop is carried further forwards; this gives more room for a firm grasp, and I think this one you show me is a very great improvement in form in that respect.

98. You think it is a very great improvement in form upon the original, and not at the expense of its mechanical functions?—Exactly. This is quite a sufficient handle for the performance of all its functions, with superior grasping capacity superadded.

99. Do you think that is capable of being improved upon, or can you suggest any other form of lever which would give you an equally good grasp, and be more convenient in any way ?—No. I think reducing the loop to the minimum would be all that I could do; it admits a large thumb; there is a general smoothness about it and handiness. Some improvements in details, I dare say, may suggest themselves; but as to the general principles and the mechanical efficiency of the details of the Martini rifle, I am perfectly satisfied with it.

100. (*Mr. Gregory.*) With regard to the question of the pull-off of the trigger supposing it be desired to get a lighter pull-off the trigger, that would be obtained, would it not, by altering the angle of the surfaces which work together, the separation of which allows the trigger to act ?—Yes.

101. Is there anything, do you think, about this action, and especially about the arrangement of the trigger and the tumbler rest, which would make it more difficult to diminish the pull-off in this gun than it would be in an ordinary gun ?—No, I think that the cases are quite parallel, the same means that would do for the one would do for the other. If you want to lighten the action, it would be to bring in a little more of the touch-and-go principle into it.

102. As far as the question of safety is concerned, there is nothing about this action which would make a diminution in the pull-off more dangerous than in any ordinary action ?—I think not; there is nothing special in that respect in the tumbler here as compared with any other tumbler.

103. With regard to the spiral spring in the large quantity of machinery that you have made, in cotton machinery the spiral spring is used to a very large extent, is it not ?—Yes, there are infinite applications of spiral springs. The most delicate application of the spiral spring is the spring of a watch, a chronometer spring for instance. A chronometer spring goes on for 40 or 50 years, making an expansion and a contraction every second of time, and is never found to fail from the legitimate action of the watch or clock. Once a well-made spiral spring has stood its required duty, there is nothing in the constant repetition of that same duty that would produce deterioration. I may mention that spiral springs are employed in railway carriage buffers, and are subject to *very* violent action; they perform their duty admirably.

104. Is there anything in the nature of a spiral spring in your opinion which should prevent your being able to give that velocity of blow which is thought desirable in exploding percussion caps ?—Not the least; if you have the percussive power bottled up in the spring and striker when it is in its compressed state they will deliver out that percussive power faithfully as long as the spring exists. It is the momentum of the striker that gives *the blow;* the function of the spiral spring is to produce that momentum.

105. With regard to the question of the pressure of the levers in the action of the gun, it has been alleged as a defect in its action that those levers work unmechanically; in other words, that in some of those levers the transmission of the power to a particular lever, instead of increasing the power diminishes the power, but increases the velocity; do you recognize the validity of such an objection in this action ?—Mechanical and unmechanical, I would say, with all submission, is a sort of slang term in mechanism; it is not very philosophical, but we will accept the expression just in its current meaning. There is nothing unmechanical in any constructive arrangement that accomplishes its object; and if that object is accomplished in a simple and effective way, that combination is good, and it is the best mechanical system that attains its end in the most simple and durable manner; and I think the ends in question are very admirably attained, with reference to this rising block, by the means employed. It is objected to that it is a lifting of the weight at the wrong end. The whole mechanical construction of the human frame is based on lifting weights at the wrong end; all our limbs are lifted at the wrong end, so to speak.

106. You mean having reference to the muscles, as regards the action of the arm and the lever ?—Yes, they are all at what would be called the wrong end, but nevertheless admirably adapted to answer their purposes.

107. Which some people call unmechanical ?—Yes, but they perform their functions well, and I am sure that this falling block and its lever will do the same, to all practical intents and purposes.

108. You have expressed your opinion generally with regard to the working lever and the way in which it performs its functions of moving the block and sustaining the block. You have also stated that

the amount of wear after a large number of rounds had been fired from the rifle is so small in its working parts as to amount to little more than a polish. Assuming rifles of the Martini action to be properly made in such a way as they will be made at Enfield, or as it is presumed that they will be made by good manufacturers under Government supervision, do you think that there is a liability to any enlargement of the amount of friction in that portion of the working lever upon which the support of the block in its proper position depends. I mean the flat part at the top?—No, I do not.

109. In fact it is more the action of a wedge fitting into its place, is it not, than the action of a cam, just the final and concluding action?—Yes, it is a sort of jamb between the buttress and the point at the other end.

110. Then that portion of the end of the plain surface is in your opinion a protection against wear or otherwise. I mean the end of the flat portion, the short end of the working lever, which bears upon the corresponding seat on the underside of the block?—It provides a large surface for future wear and tear. The real wear and tear is at that corner (*pointing out the same*), not on the flat surface, but this flat surface you may look upon as a magazine of durability laid up for you, it will scarcely ever be practically called for; where it comes to a flat surface it sustains the position of the falling block as a pillar or a strut underneath. The only part where there is a tendency to wear and tear is the getting over that corner (*describing the same*), and here are parts which have got over that corner 30,000 times, and they are not sensibly in any way deteriorated; they are simply polished.

111. (*Mr. Ross.*) Did I rightly understand you to say that the whole of the recoil was taken by this socket (*pointing out the same*)?—Yes, the semi-circular recess, the hinge of the falling block, as I would call it.

112. And is there no part taken on the horns of this lever (*pointing out the same*)?—We had a very interesting experiment tried yesterday at Enfield upon that very subject. The pin of the falling block was taken out entirely, the upper portion of this abutment recess was cleared away so that it became vertical, or a circular recess only on the bottom side, being entirely removed on the upper side. Then again the lever pin was entirely removed and substituted by a soft lead one, carefully turned and dropped into its place. The gun was fired with a full charge; when discharged the block never moved from its place, and then to show that there was no downward action to any appreciable extent on the lead pin of the main lever it was pulled out with ease by the fingers. Had there been anything like a jolt upon it, it would have embedded the lead in the joints, and would have rivetted it slightly into the recesses and joints, instead of its coming out by the mere picking action of the nail of the fingers. It was drawn out, and did not show the slightest appearance of any clipping action, or any violence at all. The fact is, I believe that there is no appreciable mechanical action downwards from the explosion on that block—it is practically end-on action. Every opportunity was given to it to fly upwards by the removal of that upper half of the semi-circular recess in the hinge-joint, but it did not take advantage of that liberty to jump up—it was in its place most perfectly—and I think that this experiment answered at once in a practical way all that could be urged on the point in question.

113. Is it mechanically or theoretically correct to have this pin above the axis of the barrel, or in a line with it?—It would be more, so to speak, correct, to have it in line with the axis of the barrel, but as it is sufficient practically to meet all the conditions of the case, and it is accompanied, I think, with advantage to have it in the upper side a little, because you get a quicker clearing off from the breech of the barrel by so placing it.

114. (*Mr. Gregory.*) And besides that, it prevents the block from rising, does it not?—Yes, it gives you the jamming power, and you get the clearing off power, or the relief of the jamming. It is a very ingenious arrangement; and then making the hinge pin loose purposely in the hole, in the rear of the falling block, any concussive action that takes place is relieved from the pin altogether, and falls entirely, as it ought to do, upon the solid abutment of the breech box.

115. (*Captain Aylmer.*) Do you think from the whole construction of the mechanical parts that the pull off of the trigger can be kept as uniform in the Martini lock as in the old lock?—Yes. I think it can. There is no special deteriorative action in the trigger parts of the Martini-Henry beyond what is encountered in every other well made lock.

116. (*Captain Majendie.*) Would it in your opinion be possible to make these spiral springs in very large quantities uniform?—Yes; perfectly uniform. They can be all spun up from the wire into a spiral form with great rapidity by suitable machinery. Then they can be hardened in a very uniform way, and with greater safety to the quality of the steel, by avoiding anything like over-heating or unequal heating of the spiral springs; they can be uniformly heated up to the red heat which belongs to the right point for hardening. And then again they can be tempered, which is modifying the original hardness, by the thousand at once. I was suggesting to Colonel Dixon yesterday a very simple way of doing that, by putting the springs when they come to be tempered into a cullender, a sort of wire cage, and lowering them down into a kettle of oil heated up to the right spring temper point. You might thus harden at one dip 10,000 spings, and be certain that every one is identical in its tempering. The ordinary mode is to temper those springs by dipping them in oil and holding them over a flame till the oil catches fire, what they call blinking. As soon as they see the oil heated to that point when it begins to blink, the spring is plunged into water, but the blinking may take place quicker at one part of the spring than at another. It is the old ordinary mode, but it is by no means either so rapid or so certain as the means that I am speaking of, namely, by immersing them in a bath of hot oil, where you can temper 10,000 at every dip, with absolute certainty as to result.

117. Then there would be no greater difficulty in producing spiral springs in large quantities uniform than there would be in producing flat springs?—No, but on the contrary, less difficulty.

118. With regard to the relative liability to rust of spiral springs as compared with flat springs applied to joints, how would the comparison hold?—They would be almost identical in that respect. It is not likely that there would be much rusting going on, because the spiral spring is enclosed in a very oil-retaining part of the apparatus. I do not know of any part of the apparatus where once having oiled it, the oil would be found more permanent than in this part of the gun; it is in a manner bottled up in the spring chamber in the interior of the falling block.

119. Then you do not anticipate any special liability to deterioration or loss of power from rust in this spring?—No, I think it is one of the most remote of all the causes of anxiety about the construction of this rifle.

120. Is there anything in a spiral spring which renders it specially susceptible to climatic influences, that is to say, to changes of temperature?—No; it would not be sensible of them in any practical sense.

121. With regard to the facility of taking the arm to pieces for cleaning by the soldier, is that an operation which in your opinion could be performed by an instructed man without much difficulty?—Yes; a man of a very ordinary degree of intelligence and handyness, could undo all the parts and dissever them, and put them together again with the greatest ease and rapidity.

122. (*Chairman.*) With regard to the machinery for producing the Martini rifle, do you consider that the machinery for producing this rifle would be equally simple with the machinery for producing the Snider

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rifle?—Yes; I think fully more simple. There are some very intricate parts in the Snider block.

123. Supposing the same space were given for producing the Martini rifle as is given for producing the Snider rifle and the same amount of labour with regard to men, could you turn out as many Martini rifles in the same space of time as Snider rifles?—Yes, I think I could turn out more, because there are skew parts in the Snider that are rather difficult of execution; it is very ingenious but the very fact of the blow of the needle being skew involves a good deal of special mechanical arrangements in the execution of those parts, which in the case of the Martini-Henry are straightforward jobs, so to speak. The falling block and all the parts of it, are very easily executed in the most accurate manner by those automaton machines that are so admirably used at Enfield.

124. It would not require more skilled mechanics to turn out that gun than the Snider gun?—No, it is a question of the special contrivance of machines to execute the different parts, and all that can be easily arranged.

125. Could you give the Committee any idea how long it would take to change the Snider machinery at Enfield into the machinery for making these Martini-Henry rifles?—I would not like to hazard an opinion upon that for I am not sufficiently acquainted with all the detail of the arrangements at Enfield.

The witness withdrew.

Adjourned to to-morrow at 12 o'clock.

War Office, Thursday, 5th January 1871.

PRESENT:

LIEUTENANT-COLONEL H. C. FLETCHER IN THE CHAIR.

Lord ELCHO, M.P.
Major HAIG.
Captain CHAPMAN.
Captain MAJENDIE.
Captain AYLMER.
C. H. GREGORY, Esq., C.E.
E. ROSS, Esq.

Lieut. TUPPER, *Secretary*.

Col. W. M. H. Dixon, R.A.

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Colonel W. M. H. DIXON, Royal Artillery, Superintendent of the Royal Small Arms Factories, examined.

126. (*Chairman.*) I presume you have looked over the programme for the examination of witnesses on the character of the mechanical construction of the Martini-Henry rifle?—Yes.

127. Would you wish to make any statement with regard to this paper, or would you wish the Committee to ask questions in detail on the several points?—I think I had better answer *vivâ voce* questions, as I have nothing prepared in writing.

128. The first point that I would ask you about would be on C. 1 of this paper. Do you consider that the power of the falling block is sufficient to resist the explosion of the charge without undue strain to any of the joints?—Practically speaking, it does resist the strain perfectly, and there is no strain upon either of the two pins, the lever axis pin or the indicator pin.

129. Have you made any experiments to determine that there is no strain upon those two pins?—Yes.

130. What were those experiments?—The examination of the falling block originally made me apprehensive that there was an undue strain upon those two pins, because the position of the block being as it were a body rotating, or having a tendency to rotate upon a certain axis, and that axis being the block axis pin, an abstract force applied to the end of the block would have a tendency, as anyone would observe merely reasoning on abstract principles, to induce the block to rotate round that axis pin, or if checked from rotation by the application of a support as in the Martini-Henry rifle, would, I thought, throw a jerk first of all upon the support at the head of the lever, and secondly, the re-action from that would be against the block axis pin. That was the first impression on examination of the block, but as the gun had been fired very often and as we have never had any accident to record against those two pins, I was naturally anxious to ascertain how it was that the effect which one would expect to happen did not take place. I therefore decided upon making the following experiment. I cut away the circle of the knuckle joint and replaced the indicator axis pin by a lead pin, and I then took the gun to the proof house, put it into a firing block and fired proof charges repeatedly from it, the proof charge being considerably larger than the service charge both in powder and weight of bullet. Of course, if there had been any tendency for the block to move it would have been shown by the action upon the lead pin, but on examination of the gun after firing, it was found not only that the block had not moved at all, but that the lead axis pin was capable of being withdrawn by the fingers, and before it was withdrawn, after one of the experiments of firing, I functioned the block, or worked the block by the lever, to ascertain whether there was any difficulty in working the block up and down. Having therefore found that the strain on the two pins did not take place, I was naturally led to inquire more closely into the reason why that did not happen, and after due consideration I came to the conclusion that the action of the base of the disc of the cartridge against the face of the block, under the heavy pressure generated by the explosion of the charge, caused an amount of friction which was tantamount on the instant to the adhesion of the two parts so firmly as to give rise to nothing but a direct movement back of the block upon the knuckle. I stated this once before, I think, in a letter to the Committee when the subject was under discussion, and I am more confirmed in this opinion the more I examine the working of the block. I have made subsequent experiments confirming it in the presence of three gentlemen who came down to the factory the other day by order of the Secretary of State for War, viz., Professor Pole, Mr. Nasmyth, and Mr. Woods.

131. At what point do you consider the recoil transferred to the back part of the falling block?—The knuckle joint. Of course I am reasoning from the practical effects of the explosion, or rather of a force generated under peculiar circumstances, and applied in a way which makes it necessary to consider it differently from the case of an abstract force. If I were merely reasoning upon an abstract force applied at the end of the falling block, of course you could resolve that force, if you knew its value, into two other forces, acting upon the head of the lever and the pin, according to strict mechanics and considered as an abstract force, but this force is applied in a peculiar way. The head of the cartridge being in a counter

sink, any attempt to overcome the friction of the falling block would not carry the head of the cartridge with it. Altogether it becomes one complete body for the instant which is necessary to resist that tendency to fall. There is another thing which I should like to mention as confirmatory of that view, which is this. The old Peabody rifle has no support under it like the lever, it has got a spring, and it acts in the wrong way for a support; and after loading the Peabody you can, by putting your thumb here (*describing the same*) push the block down. That is the fact that in the old Peabody, although perfectly safe to fire, if you put your thumb upon the block after loading, you can press it down with very little force indeed, and yet on firing, the block is perfectly safe, and does not fall or show a tendency to fall. That, I think, is very strong evidence in favour of the view which I take, and have taken all along from the beginning, as to the peculiar effect of the force upon the face of the block, tending to preserve the whole system rigid and safe.

132. With reference to C. No. 2, do you consider that the spiral spring and the striker are suitable for the purposes for which they are intended?—Yes; I do perfectly. I think the more we examine the action of the spiral spring, the more we are in favour of it. I say "we" because both myself and all my leading hands who have worked with me through the whole thing, have most carefully examined the condition of the striker. I have been making some experiments upon the peculiarity of the way in which it is necessary that the percussion powder should be fired, or the cap should be fired.

133. Could you state shortly what those experiments were?—One of my objects was to find out, if possible, whether a heavy body or what heavy body falling the distance of the travel of the striker, which is about ·42 of an inch, would fire a cap, to get, if possible, some kind of equivalent expression of the duty done by a spiral spring working that same distance; but I found that even with a weight of 200lbs. falling that distance it could not fire the cap; it pushed the whole thing away; it drove the cap into the cartridge; trying to fire 14 or 15 cartridges in succession with a dead weight of 200lbs. falling a distance of ·42 of an inch, we could not fire the cartridge, that is to say, we made a point to strike the cartridge with a total weight of 200lbs. and the travel of that point was ·42 of an inch—we tried it repeatedly, and all we could get was the whole thing disrupted, the cap being driven in, but it did not fire the cartridge. That showed to me that the momentum necessary to fire a cap must be made up of considerable velocity. The momentum of a heavy body falling ·42 of an inch would be a very heavy weight with a small velocity, but what is clearly necessary to fire a percussion cap is a comparatively high velocity with a small weight. I have tried to calculate, and I think I have arrived at the same conclusion as Professor Pole; I calculated the velocity of the coil spring in striking, and I made it out under the ordinary formulæ of "work" to be about 35 feet. I then worked out the height which a body of the weight of the striker should fall to produce that velocity, and it came to 21 feet. I then rigged out a certain arrangement for dropping a weight of the weight of the striker 21 feet upon the cap and exploded it. I showed this also to those gentlemen who were at Enfield the other day. I arrive then at this, that what is wanted to fire a cap is a very sharp blow, or a blow compounded of comparatively considerable velocity but not so much weight of body. I therefore think that the coil spring is very well applied in the form that is shown in the Martini-Henry to produce the effect required, if made properly, which means of proper materials, properly hardened, properly tempered, and properly tested afterwards. An examination of this spring, in fact, and the duty it does, as against the flat spring of the present form of lock, shows that with a less actual amount of work it fires the cap. That we made the subject of two distinct experiments, they were comparatively speaking rough experiments, but they were the only way in which you could exhibit comparatively the effect of a blow.

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134. Would there be any difficulty in uniformity of manufacture of the spiral springs?—I do not apprehend any.

135. With regard to cost, are they cheaper or dearer than the flat springs?—They are comparatively speaking nothing; they are only about a halfpenny a piece.

136. After you had examined the 65 arms which had gone through a very severe trial by different regiments, did you find the spiral springs in good or bad condition?—Very good.

137. Had they much appearance of being rusted?—No. They are better protected than any other part of the action.

138. With reference to the strikers of the 65 arms, were they in good condition?—Yes.

139. Do you think that there is any danger of the striker breaking if properly made?—No more danger than what is to be apprehended from an accident. An accidental flaw in the material of course you cannot always avoid, but as far as ordinary manufacture is concerned, I do not think there is any necessity for any apprehension on that score. We worked out very closely the size of the striker and the size of the striker hole, for you may recollect the difficulty that we got into at first with the Martini-Henry gun; when the hole was too large and the striker too large; we got little copper discs cut out, which entered the hole in the block, and they eventually stopped the action: now, that is completely corrected.

140. In the arms that were first issued for trial, were there not a good many miss-fires?—Yes.

141. I believe that after a change had been made in the springs, there have been comparatively no miss-fires?—I believe that to have been the case.

142. Can you account for there having been miss-fires in the first issue of the arms?—The spring was made to the pattern arm which the Committee had settled. The Committee may recollect that there was a little trouble caused by its being found that when the lever was down, if you pulled the trigger and the cartridge was in, the spring would bring up the block and fire the cartridge if it was a little sensitive. We then had a strong spring in. Then experiments were made in order to ascertain what strength of spring would not do it. That spring was settled by the Committee, and appears in what is called the No. 3 pattern arm, which was sent to me to govern the manufacture upon certain points, the spring particularly, and the form of the striker.

143. You consider that the miss-fires of the first issue of arms was owing to the weakness of the spring and not to any defect in principle?—Entirely to the weakness of the spring, because that was remedied immediately afterwards by giving increased power to the spring.

144. Do you consider it likely that the spiral spring will deteriorate from long use?—That depends upon what you call long use; you must express it by the number of times that you could use it.

145. Say 20,000 or 30,000 rounds, with the ordinary number of snaps?—I think there is one arm that we have got, the first short action gun, with regard to which I have some recollection of the committee having said that they had fired 30,000 rounds* from it. I do not know whether that is correct or not; it is what is called the X 1 arm. I cannot find any documentary evidence to that effect, but the spring is as good as it was the day it started. I think I could answer the question in general terms, that it will not deteriorate during the ordinary use of the arm.

146. The Committee have been informed that spiral springs require to be set to a certain strength, and that after they have once been set to that strength, the strength of the spiral spring does not vary; is that the case?—The history of our experiments in

* This arm probably fired 10,000, not 30,000 rounds.

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the manufacture of springs is this. After hardening and tempering and manufacturing this spring, and then testing it and finding that its statical force was expressed by a weight, say of 40 lbs. when at full cock, I was anxious to find out, after firing 1,000 rounds, what alteration had taken place in the strength; that is to say whether, after hardening and tempering, the spring was in its normal condition of tension, or had any tendency to get a little weaker or to lose force. The result of the experiments that I made showed that there was a tendency to come to a normal condition, which was expressed by a loss of, say from 2 lbs. to 4 lbs. out of a 40 lbs. weight in the spring, after tempering; but that after firing a considerable further number of rounds the spring showed no further tendency to yield. I tried this with several springs, and came to the conclusion that part of the inspection duty would be this, namely, that after manufacture the springs would have to be fired in a block, that is, snapped in a block a certain number of times, to bring them down to their normal condition, he loss that they would suffer during this snapping having been made up previously by an excess of strength in the manufacture to about that amount.

147. With regard to C. 3, do you consider that the working lever is properly placed, and adequate for the purposes for which it is intended?—It is a very powerful lever for that purpose, in its present position: it is very powerful for extracting. You can pull the head off a cartridge in case of the cartridge sticking. In fact it answers its purpose fully, as far as its capability of extracting goes, and always works the block properly.

148. Does it keep the block up to its face in firing?—Yes.

149. Do you see in the 65 arms that have been tried and passed through a severe trial by regiments, any signs of the lever giving way or failing to do its work properly?—Not at all.

150. There is no indication of any loss by friction in any of the parts of the lever?—We have not found any. There is one thing which I should mention, that in this lever it would be necessary in the drill of the soldier that he should be taught at all times to bring the lever up sharp.

151. Why would that be?—For this reason, that if it stops short of coming home at any distance, you have a tendency to break your tumbler. The tumbler comes down upon the shoulder of the lever before the piston gets to its bearing and sends the lever home. There have been one or two breakages of that sort; therefore, as far as loading is concerned, the soldier must be taught to bring the lever home quick and not to bring it home slowly.

152. In fact, if he did not close the lever there would be a tendency to miss-fire?—No, I think not, because he would bring it home within a very short distance; the spring would bring the block up at this distance. You would fire, but at the same time you would have a tendency to injure your tumbler. I have only spoken as to the position of the lever in answer to the questions which have been put to me.

153. Will you be good enough to examine the pattern of lever which has been put before the Committee by Mr. Martini (*handing a rifle to the witness*) Do you consider that that shape of lever is equally serviceable with the other?—Yes; it is very strong, you have immense leverage in this pattern, and rather more than in the other. The ratio of the lever from here (*describing the same*), to the fulcrum would be greater than in any other one; your finger is confined here, and you must have the full length from here to there (*describing the same*), you have doubled the leverage. Here the ratio of this lever to the counter lever, which would be the end of the lever to the horn, would be about five times. This rifle necessitates less drill on the part of the soldier. The soldier is always taught to bring up his right hand and clasp the stock firmly as a portion of his drill. At the same, I do not see any difficulty in the man being told to bring it up smartly in the fresh pattern of lever, the thing in this new pattern is, that the lever would be pressed home independent of the soldier's own volition.

154. It has been put before the Committee to answer the objection, that the lever in its present form would be in the way when the arm is used for bayonet exercise. Do you agree in that?—Yes; it is very much in the way.

155. Do you consider the new lever an improvement in that respect?—It is an improvement, but still there is an objection. Officers who are accustomed to bayonet exercise, and know the position, would give a better opinion than I can, but at the same time I can understand that a man who wants to grasp the hand of the butt would put his fingers inside here, and would be thrown off the grasp altogether. Anything just under the small of the hand is very objectionable.

156. With reference to C. 4, does the centre pin upon which the lever works do its duty properly?—Apparently so; we have had no breakages at all.

157. There is no evil arising from the continued use of this pin?—Not the slightest; we have never found any injury at all there.

158. After an examination of the 65 arms that have gone through a severe trial, have you discovered any wear or any breakage in this pin?—None.

159. Or any liability of the pin to fall out?—No, it cannot fall out so long as the keeper screw is in the proper position.

160. Is the accuracy of the indicator permanently reliable?—It must work—if the pin works at all, of course it must work the arm—unless it sets dead fast it must work. If you can function the action you must function the indicator arm, because it is a part of the centre pin.

161. On C. 5 do you consider the continued action of the tumbler, sear, and trigger safe and strong?—The reports of the 65 arms that came in spoke generally of the want of uniformity of the pull of the trigger, and we have been going very closely into that. Those first 65 arms, or rather the first 200 arms, were entirely made by hand—very few men were concerned in them; they were got up in a hurry, and we had no time to study out what the sizes and dimensions and the relative value of the position of the various parts should be. Since they have come back our attention has been called more particularly to this fault, and a serious one it is, of the want of uniformity, that is to say, some guns pulling more than others, and in a letter which I wrote to the Committee I stated that that could be overcome; but I did not describe in detail the method which we should propose. We want to have a rather larger axis trigger pin, the next gauge of wire, and we think that the trigger pin should have a head and a screwed point to prevent the liability of its coming out. It is a smooth pin now, merely driven in. That involves considerable accuracy of fit of the hole and pin, and even then I have seen some of the pins with a little tendency to move. There is nothing to prevent its falling out, it is a very important pin, and we propose the next size of wire (I think it is No. 7) and that there should be a head and a screwed point. There is plenty of space to put it in and I should strongly recommend it. This hole is an oval hole. When the arm came down to us originally from Mr. Martini there was no tumbler rest. There is only one bent on the tumbler, that was cut of course at an obtruse angle to allow of an easy pull-off, and it held at that time the whole weight of the spring plus the leverage. That arm we found was dangerous, that is to say, that a sharp blow on the ground with the butt end of the gun would fire the arm, or rather enable the spring to get free. We then applied a tumbler rest. That was applied after discussion with the Committee in order to obviate this dangerous position. By applying a tumbler rest we take the weight of the spring on to the tumbler rest, and so relieve the trigger from all duty, and it is perfectly free in its action, as you can feel, even when it is loaded and the spring at full cock the trigger does not take any weight. But in order to fire the action it was necessary

to raise the trigger during the pull-off, so that it might reach up to the bent in the tumbler, take the weight of the spring, and relieve the tumbler rest, the continued action of the pull-off freeing the sear end of the trigger from the bent, and so firing the gun. This arrangement requires a nice adjustment of the position of the oval trigger axis hole, of the length of the trigger up to the nose, of the position of the bent of the tumbler and of the rest, in order that during the pull-off all may work harmoniously together. This could hardly be effected satisfactorily in a hand-made gun, but I do not anticipate any difficulty when it is made by machinery with a proper system of gauges and inspection. The oval hole was necessitated by our putting a rest in. All these little things require to be very carefully worked out. We found a little want of accuracy in some of the positions of the holes in the examination of the 65 arms as naturally would be the case. The men were hardly up to the various points, and it is only by close study that all those points have come out. We are now in a position to see everything connected with the action and what is required.

162. You think that with machine-made arms and with the alteration which you propose, there would be no difficulty in producing a uniform pull-off of the trigger?—None whatever.

163. Supposing, for match shooting it were necessary to have rifles with a very light pull-off, say 3lbs., would there be any difficulty in making the pull-off of the Martini-Henry as light as 3lbs.?—No; you would want a little adjustment in the rest and in the angle of the bent of the tumbler. I do not think there would be any great difficulty in arranging any specific weight that you want and keeping to that weight.

164. Do you consider that after a considerable amount of use, say, firing 10,000 rounds, the pull-off would be likely to be altered at all?—I do not think so.

165. Would it be likely to be increased or diminished by use?—That would depend upon which part wore. If the top of the bent of the tumbler got a little more obtuse it would become easier.

166. Is there any indication of wear in the 65 arms?—You must expect fair wear and tear in any gun in constant use, in the parts having frictional surfaces. You must have friction and a certain amount of wear; you cannot get over that; and you must in the examination of those things consider that the thing is not intended to last for ever. We want to make a gun to last a sufficient time to make us feel that there is nothing wrong about the principle, and that the capability of repair, which is a very important point, is of such a simple and perfect character that you can always substitute a good part for a part which is worn, or defective, or broken.

167. With regard to C. 6, do you consider that the action of the safety bolt is simple, efficient, and permanent?—It is simple and it is efficient if a man uses it, but the difficulty is to get a man to use it I should think; and then if he does not use it he may fancy that he has used it, and playing with his gun fire it. The intention is good, but I do not think that it is carried out. I am afraid in practice you will find that you are depending upon rather a broken reed in the shape of that safety bolt.

168. With regard to the permanence of its wearing power, what is your opinion?—It will wear very well; it is strong enough to do its work, and it will always do it if it is always used.

169. I see in the 65 arms that were sent out to regiments which you examined, apparently one safety bolt had gone wrong?—Yes, in putting the action together (I think it was a little thin) it had got in a wrong position over the tumbler rest; in fact, if you recollect, there was a gun in which you could not keep the action open for this reason. The tumbler rest was not working in fact, and the spring, instead of being under the tumbler rest to lift it up to its work, was over it.

170. Owing to the lock being improperly mounted?—Exactly so; there was nothing to hold the weight of the spring. I should like to mention that if you want this bolt to work properly it should be automatic in shape, and of the form which I proposed once before, I mean for the purposes of safety.

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171. When you say "automatic," you mean to load upon the half-cock?—I mean that the action of the bolt should not be made dependable upon the soldier, but it should work with the action.

172. You would load upon the bolt or on the half-cock?—It would be tantamount to the position which half-cock gives you in the ordinary gun, and which I think is wanted in this gun to make it safe.

173. This question has no reference, I presume, to the mechanical construction of the gun, but to safety in handling?—It may be considered as an answer to the question which you have put to me as regards efficiency, I think it would be more efficient if made automatic.

174. You mean by "automatic" that the soldier should load upon the half-cock, or upon the bolt: that is to say, when the gun is loaded it should not be in a position in which it could be fired?—Yes.

175. Having examined the 65 arms that were returned from the regiments, do you consider that the safety bolt has shown more signs of wear than other parts of the lock action?—No.

176. Is it equally durable with the other portions of the lock action?—Quite so. I think there was only one broken, and that was broken by a man trying to pull off against it.

177. As to C. No. 7, do you consider that the cartridge extractor, and the method of its working, is suitable for the purposes for which it is intended?—I think it is a very good extractor, and works perfectly. I think the double action, the first and second blow and the power of the lever, and the strength of the parts are perfect. The extractor is a very simple thing; it is very strong, and it is operated upon by the falling block first of all to make a start and then a quick movement by a blow given close the pin; as far as the extractor goes it is a very good extractor. I think it is an eminently satisfactory part of the action, its capability of certain and rapid extraction.

178. With respect to C. 8, do you approve of the several parts of the breech action being enclosed in a metal case, having reference to compactness, strength, and the protection of the different parts of the action from dust and wet?—I do not think you would find that if you put it in store you would keep the dust out, not so well as in the present Snider action, and that is a point which I think you must consider; I think that if those arms are put into store some special means would have to be adopted, and which would be in the end economical. From an examination of the arms which have been standing in racks, in the Tower and other places, I think that this action would speedily be filled with dust. For preventing the action being filled with dust you might have something put round them merely for store purposes; but, I think, if you look at this action you will observe that the action is not so closed as to prevent dust getting in. There is nothing closed here except the spiral spring—that is the best bedded part of the whole action, of course—and in the 65 Martini guns we found that when other parts were coated with rust, there was hardly anything of the sort in the spiral spring.

179. (*Mr. Gregory.*) That being in fact a very important part to be protected?—It is a very important part.

180. (*Chairman.*) When you say that those arms which were sent in were coated with rust, had they been submitted to the fair trial that soldiers usually give to their arms or to any excessive trial?—I do not know what the trials were, but I should think if those arms had been issued as service arms to regiments, and if the serjeant armourer had performed his duties of periodically looking at the arms, they would not have been in that condition under ordinary service; but if they had not had the examination of the armourer-serjeant for some time, and if the regiments had been

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called upon for the hard service that you have seen in guns used in New Zealand and the Cape of Good Hope, also, you would have those guns showing considerable symptoms of rust.

181. In fact, the condition of the arms that were returned to Enfield, more resembled arms that have been severely tried on service than arms which have undergone the ordinary use by soldiers in peace time? —Yes, I think so for the short time that they have been so treated.

182. Were not the parts of the breech action, as well as the interior of the barrel coated with rust?—Yes, in some cases, but not many, for the action of firing had kept them tolerably clean, and what dirt there was inside came out with the cleaning of the barrel.

183. Did you find on trial that the breech actions generally worked without any further cleaning being given to them at the factory?—There was one very bad one, which had been very much rusted. After you once function each action, and break the skin of rust which has closed it at first, you can go on; that can take place fortunately with the Snider, and with this gun so long as the rust has not had time to corrode the parts, and make them brittle; as long as it is merely a coat of rust all over the parts which has set the action fast for a moment, directly you function and get the parts to move, that crust is broken both in the case of the Snider and this gun. I believe they have both been proved capable of working after a very considerable amount of rust had been allowed to accumulate upon them.

184. With regard to C. 9., do you consider the mode of stocking sufficiently strong and durable for a military arm?—I think that there should be some modification in the stock and the stock bolt. In the first pattern arm which Mr. Martini produced there was no enlarged hole in the stock to receive the implements. That was added subsequently after it was decided that the soldier should carry a certain number and description of implements. The stock bolt was also made shorter to give sufficient room in the stock for this hole, but to strengthen the stock bolt it was made of steel, hardened and tempered, instead of iron. In testing three Martini arms, in order to ascertain whether the stock was firmly and sufficiently strongly secured to bear the ordinary rough usage which it might receive on service, I made the following experiments: I swivelled the gun upon the muzzle and allowed the butt end to fall from a certain height on to an iron block. This was done with two Martini arms, one Enfield Snider, and a muzzle-loader Enfield, and they all stood the shock without any injury. I then tried the effect of a blow struck by the hand on the butt upon a wooden block, and all three guns broke. One Martini broke through the lever catch-bolt hole, and close up to the head of the stock bolt, or in other words at the weakest part of the stock: two other Martini's struck in a similar manner, broke the stock bolt in the screw hole, showing apparently a weakness at this particular point. The Snider Enfield broke at its weakest point, which was through the hand and breech nail and lock. I consider that it would be advisable to use a different material from the sharp steel hardened and tempered for the stock bolt; to make it longer for the purpose of bringing the head into the strong part of the stock for the butt end of the stock (at the present moment it is just in the hand of the stock), and for that and other reasons to do away with the trap in the butt, and with the enlarged hole to receive the implements in the stock.

185. When this trial took place was the gun struck on the toe or the heel of the stock?—On the heel. I do not know that that is the weakest part of the gun, probably not; had I struck it upon the flat of the butt it might be still weaker.

186. At all events the trials to which you put the stock of the Snider and the Martini were similar?—Yes.

187. And they all broke?—They all broke with a blow by the hand.

188. Therefore judging from those trials the Martini is equally strong with the Enfield or the Snider?—Yes.

189. Only that the weak part of the Martini is in a different part from the weak part of the Snider or the Enfield?—Yes, I think naturally it would be; it is very differently constructed and might show either stronger or weaker.

190. If the alteration proposed by you be made it would make the Martini a stronger gun than either the Snider or the Enfield muzzle-loader?—Yes, I think so.

191. (*Lord Elcho.*) And that alteration would not add to its weight?—No; you take out the implements, and I think you just balance it. The soldier would have to carry them somewhere, but it would add very little to the weight.

192. (*Chairman.*) From your examination of the arms that have been sent in from the regiments, do you consider that the mode of fixing the stock is likely to be permanent?—I think there were only two cases in which it had worked a little loose, and I cannot account for its working loose exactly unless they had attempted to take out the stock bolt, or the stock bolt had not been screwed home originally. The stock bolt has got a washer between it and the wood and a rather larger bearing surface upon the head, and in the case of the stock shrinking, there is a facility in putting on an additional washer.

193. In those rifles that worked loose, was there any difficulty in screwing them up again?—No.

194. (*Mr. Ross.*) Was it the fore-end or the butt? —The butt. I would just mention that the metal which I am going to try for this stock bolt is homogeneous metal, and after making it I am thinking of heating and applying the oil tempering process to it. I think it would stiffen and strengthen it very much without rendering it brittle, and it would make it very rigid, because you do not want this bolt to bend. I will try iron also, but I think that will be a little too soft. The homogeneous metal of which we make the barrels is not a steel that will harden, but it will bear a wonderful amount of stiffening by the oil process. The stock bolt that I am making now I contemplate stiffening by that process, and I think that it will be a very great improvement.

195. (*Chairman.*) With regard to A. Supposing that a large supply of Martini actions were ordered, do you consider that they could be made with facility and economy, as compared with the Snider action?—Yes. Of course there is no difficulty in the Snider action at the present moment, because we have been so much at it and know it thoroughly. But I should answer the question in this way, that there would be no difficulty whatever, as far as we can see, in making that or even a more complicated action with our means, and considering what we have hitherto done with guns; in fact the Westley-Richards' guns that we made 20,000 of, breech-loaders, were more difficult guns, and yet we made them. It was a capping gun, but it was a breech-loader.

196. Supposing the same space was allotted for machinery as is now allotted to the Snider action, and the same amount of labour was assigned for making Martini actions as for making the Snider, do you consider that you could turn out an equal number of Martini actions as Sniders in the same time?—I can hardly tell that; it is a question of manufacture, which I think you had better leave to the Government factories. If we were ordered to make 100,000, we should make them in the shortest possible time; we have not tried it yet; we have not fitted out a single machine for the purpose, but I can answer generally that there is no difficulty in the manufacture. That is a point of course for us to look into, but I could not answer specific questions upon that point, as to the relation between the time occupied in making the one gun and the other. As I said, I do not apprehend any difficulty in the manufacture, and there are four or five parts less in the one than in the other.

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197. (*Mr. Gregory.*) Do you think that they would cost more?—When we get into full swing, I daresay that it would cost less; the barrel would be dearer, of course.

198. And so it would be if applied to any gun?—Yes; and this gun having iron furniture, is an important element which you would have to consider very carefully. If you want to reduce the cost to a minimum you must look at some points in this gun, which I think are totally unnecessary, which have merely the appearance of neatness which iron furniture always gives to a gun. There are many very great disadvantages in iron mounted guns, and I should strongly recommend brass mountings to be used.

199. (*Chairman.*) Why would you recommend brass instead of iron?—In the first place it is cheaper; it is easier to work; it is more simple; it is a matter of casting instead of stamping. In this gun before me all the furniture is a matter of stamping: it means dies and steam drops and forges, and large furnaces for heating the metal; and then you have the trimming process, and all these things, with iron, make a very great difference in the cost. Then again, after the brass is used upon the gun, it is always capable of being melted up and used again; whereas with iron you cannot do so; it is of no value after it is once on.

200. Is brass equally durable with iron?—Yes; all our guns, as a rule, have brass furniture; it is only the short rifle that has got iron furniture.

201. In regard to the heel plate, would there be any difficulty if it is made of brass to have it chequered?—None. It would be much more easily chequered. It would not last so long of course; it would fill up with dirt, and I am afraid that is all you get from chequering. You lose all the effect of chequering as far as any friction upon the shoulder is concerned, and I do not think that you will get any benefit from chequering.

202. With regard to B., do you consider the breech action generally simple and efficient, and likely to do its work in all climates with safety and regularity?—As far as our experience goes with reference to moderate and very cold climates, that is to say, Canada and England, the results are favourable.

203. We have received three reports from India which are equally favourable?—I was not aware of that.

204. With regard to D., have you any remarks to make?—I have read over that portion of the programme, but I do not think it is exactly worded in the proper way. You see it mentions defects and their measure of relation to other points which where the defects are of different sorts, you cannot give, unless there could be a numerical expression for each defect put down, and you total them all up. It would be very difficult to answer this question, and I do not think it is one which could be answered satisfactorily by anybody, it is something like an opinion upon things in general. I should be very glad to give an answer to any specific question.

205. Could the arm be made interchangeable with equal facility as the Snider arms?—Certainly.

206. Therefore any particular parts of an individual arm that might get out of repair could be easily replaced?—Yes, perfectly; that is what we should do.

207. There would be no greater difficulty in repairing the arm, say in India or in any of the colonies, than there is now in repairing the Snider arm in any place where there may be proper machinery?—No; we send out finished parts to India for the Snider.

208. It has been suggested as to the position of the *present*, that it would be convenient if this portion of the head of the lock box (*pointing out the same*) were hollowed and roughed, would that weaken it at all?—No, it would not weaken it at all.

209. And might it be done without increasing the expense?—Of course, every little alteration means an additional penny or two more, but I do not think it would be more than that.

210. (*Mr. Gregory.*) You stated that in the use of this gun, if the working handle was not closed smartly, there might be a tendency in discharging the gun to break the tumbler. Irrespective of drill, by which every soldier could be taught to close it smartly and irrespective of the improvement which you say is made in that respect by the proposed new pattern of handle, might not that objection be obviated by strengthening the tumbler?—If you begin to strengthen it, I think that would be the wrong mode of doing it. I mean that in order to meet an accident of this sort, of course you can strengthen until you come to a point at which any amount of blow will not injure the thing, but the great thing, I think, would be to prevent the blow being given to the tumbler there. If you strengthen it here (*describing the same*), you will have to alter some of the other parts, and perhaps you will have to alter the relation of the parts to each other. You might strengthen one part at the expense of another.

211. Do you think that the tendency to break is of sufficient importance to make any structural change necessary?—No, I think not if the soldier is properly taught to bring up his gun with certainty, and then to fire it off. If he has been told not to bring it up slowly, and if a part of the drill is made to include those directions that he is to bring it home sharp, I think there would be no danger at all. It is a little point which I have touched upon, because it is evident that one of the tumblers of the 65 arms had been injured in that way. In fact, it was described so by the regiment, that the soldier pulled the trigger when the lever was down, and then he found it out of order.

212. The proposed alteration in the working handle would obviate that difficulty, would it not?—Yes. I think the very fact of bringing it up brings the man into a position to oblige him to do it.

213. You have expressed some objection to the safety bolt, which had reference, not to its mechanical character, but to the principle of being a bolt closed by hand, and you said that you thought it ought to be automatic; that, I suppose, is not a mechanical objection but a soldier's objection. You do not speak of that as a manufacturer?—It is an objection based upon an opinion, my opinion being, that a soldier would not do it, but that he ought to do it.

214. That may be a question of drill; it is not strictly speaking a mechanical question?—No. You should not rely upon the soldier's intelligence too much upon those points. The thing should be simple and easy, and self-evident in its movements, but that is not self-evident.

215. Apart from the question of this bolt being made automatic, or otherwise, you do not think that it is specially likely to get clogged with dirt or anything of that sort?—As far as our experience goes, and our examination of the arms which come back, the bolt has worked well hitherto.

216. It is similar in principle, is it not, though slightly different in detail, to the safety bolt which has been used for generations almost, in firearms?—Yes, it is so.

217. It has been suggested, that in some of the working parts the fittings are rather small; are you of opinion that such is the case with the exception of the points to which you have called attention?—I think not. Here (*pointing to it*) is a screw which holds down the spring and the tumbler rest, and also the safety-bolt movement. This trigger axis pin is small, and we propose to enlarge it. I think I mentioned in my report, that in two guns the block axis pin had set fast; two out of the 65 guns set dead fast, but I do not make a great point of that for this reason, that undoubtedly if a soldier has a gun of this sort, very slight attention on the part of the Armourer-serjeant would ensure the parts being kept free from rust.

218. The gun works well, does it not?—Yes, the gun works well; but supposing that you broke the main spring inside, or broke the striker, you could not dismount the action to replace it in the case of the block axis pin setting fast, the gun was done for and

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practically useless. We could not get it out. A gun-metal pin might, I think, be used with a keeper screw. It is very important that you should have the means of getting this block out and replacing the spring and the striker.

219. You think that the substitution of a brass pin might meet the difficulty?—I should put a gun-metal pin. I would not put a screw at all. I should have a keeper screw like there is in the rifle before me; it would be merely a plain bolt.

220. You think the case would not be calculated very greatly to protect the working parts of the action from dust with the exception of the spring which you consider is peculiarly well protected?—It is better protected than any other part.

221. That objection, of whatever importance it may be, applies, I presume, to all actions which have a falling block?—Undoubtedly.

222 It is not peculiar to the Martini action?—No, not at all; there is so much freedom left between the falling block and its sides that you cannot avoid dust getting in. For instance, the parts would be oiled first of all when sent into store; and that very oil, though it tends to preserve them from rust, attracts the dust, and then it gets clogged. The first thing that the armourer would have to do before issuing the arms from store, would be to take the parts to pieces and clean them all; and when parts like these in a large proportion of the arms are so affected, that would be a long operation.

223. Is there any structural remedy which you would propose with regard to that?—The simple remedy for arms in store would be to put some kind of cover over the action while in store, and I think that should be a cheap and effective one.

224. Do you consider that evil to be so serious that it should discourage the use of the falling block?—No. A gun of this sort is more affected, I think—in fact all military guns are affected—from circumstances not connected with their use as guns, but connected with their transit, with their keep and preservation in store, and with their movement from place to place than from the use that they would have in the hands of the soldier. In India it is found that new guns in store perish faster than arms in the hands of the troops, owing to the constant alternations of great heat during the day, and great damp at night, and the necessity of occasionally taking the arms to pieces to clean them from damp and rust. It is a positive fact that when we came to make inquiry into the number of arms fit for conversion in India, of which I was told there were 80,000, there were none fit for conversion. I had an order to fit out a certain quantity of machinery, and send it to four places in India, and send men to convert the arms. I suggested before I did anything of the sort, owing to information that I had from the Inspector-General of Magazines, that certain inquiries under certain headings should be sent to India (I gave the headings), calling for a return of the condition of the arms; and when the information based upon this return came home, I was informed that in their opinion none of the guns were worth conversion. Therefore you have got to look to the preservation, and I think it is a very important question of all the arms in store. If a gun perfectly adapted for military use is found in store to be of such a nature and description as to require special arrangements you must enter into those special arrangements for keeping them properly in store. I would sooner keep those arms in boxes and chests in store than in racks, in order to keep the dust out.

225. With reference to the mode of stocking, assuming that by any accident the present bolt should be bent, of course it would be impossible to tighten it up?—Certainly, if it were bent, as you could not extract it.

226. Having regard to that condition, might it or might it not be desirable to attach the bolt to the iron case, and have the thread at the outer end, so that it should be tightened up by a nut in the stock instead of having the head in the stock?—We discussed that the other day. Mr. Pole, Mr. Woods, and Mr. Nasmyth spoke of that; supposing the gun was so injured, and the bolt was in, I said that I should saw the stock in two, and get it out in that way. The simplest mode of repair of that sort would be to break the stock or saw it in two, take out your bolt and put a new stock and bolt in; you could not prevent the chance of occasional injury of that sort, the breaking of the stock, or the bending of the bolt, but I think the simplest plan would be what I suggest for getting over that difficulty.

227. (*Mr. Ross.*) Would this mode of strengthening and fastening the butt at the breech action entail doing away with the trap for cleaning implements?—No; that does not follow as a matter of course. You might keep the trap, but it would be no use to you, the trap is only put in there to allow you to put the implements in. Now we can also screw and unscrew the stock bolt through the trap, but in the other case we take the butt right off to get to the hollow. Certainly, the hollow stock would remain, but you would have no trap; you would unscrew the butt if you wanted to tighten the bolt.

228. Do you find the traps broken in the arms that have been tried by the troops?—Yes; they are nearly all damaged. I think it is a very weak part of the gun, and had better be given up.

229. (*Capt. Aylmer.*) In the 65 arms that have come in, have you found any wear of the rifling of the barrel of the Martini-Henry?—No; none.

230. As regards spiral springs, you can test them with great accuracy at Enfield. Would there be any difficulty in armourer sergeants testing them?—None whatever.

231. There would be sufficient means, would there not, of testing them in a regiment?—If it was found necessary, but there is no necessity for that being done, we prefer a dead weight. What we do is this: we have a rod, and we put the spring on to the rod, the rod may be graduated to represent the length of the spring, which it ought to be at full cock, and the length at bearer. If you put a heavy weight on to this rod the spring is brought down to the distance at which it stands, at full cock the statical power of that spring at that position is the actual weight which you have got on it.

232. In the case of the pull-off becoming irregular, do you think that an armourer sergeant would be always capable of regulating it?—He would have to be instructed in the result of the action, in the same way as we instructed our armourer sergeants in the action of the Snider.

233. Do you think that there is any danger of the screw bolt being so far screwed in as to impede the action of the mechanism under any circumstances?—That is a matter of manufacture and construction. We should ensure that it should not be the case. There was one case in which it did happen.

234. (*Capt. Majendie.*) Do you know what is the price of a flat spring?—The price of a flat spring, that is to say the main spring of the 1853 pattern, is about 1*s.* 4*d.*

235. What amount of firing has any spiral spring to your knowledge stood; I am excepting this gun* which has fired 30,000 rounds, because there seems to be some doubt as to the exact number of rounds which this gun has fired?—I think some of the guns which have been returned must have fired 4,000 or 5,000 rounds at least, besides what they fired at Wimbledon; some of them went to Wimbledon and they must have fired more there. I daresay some of them fired 10,000 rounds at least.

236. (*Lord Elcho.*) What do you reckon the ordinary life, as the expression is, of the Enfield or Snider rifle taken as a whole?—You see it does not wear equally; being interchangeable we constantly repair all the parts as fast as they become damaged. The only thing is, of course, that the part which wears the most and is the most essential is the barrel.

* This arm had probably fired 10,000 not 30,000 rounds.

237. But assuming that that process was not gone through?—I have had to draw up a table of depreciation for a particular purpose, namely, for charging the Indian Government for arms taken by regiments to India, and crediting them with the value of the arms returned by the regiments from India: they take over the arm and pay for it when they leave the country. The Indian Government have to pay the value of the arm; it may happen that an arm has had several years' service and we say you have got to pay so much, the years' service representing a deduction upon the first cost. When this regiment comes back from India the Indian Government have had several years' service out of it, and then we take those years' service as still further reducing the cost of the arm, and we pay to them the value of the arm as it comes back to us. I was called upon to draw up depreciation tables showing the value of the gun at first starting, and running it off to nothing at the end of a certain number of years. I said it was no use taking the old standard of 12 years, which was the old Brown Bess standard, and considering that it is worthless then. I said that the interchangeable gun has got such life that I never know when it wears out, the different parts are all perpetually being renewed. I was told that I must fix a time, and so I fixed it at 16 years, and the value of the arm is calculated as running off in 16 years, but that was merely for the purposes of finance, as between the two departments, the War Office and the India Department, and that does not represent, I think, the real facts of the case, and I do not think that I could give you any answer further than that an interchangeable arm is so capable of being simply and economically repaired as it is used, that it is difficult to assign any time at which the arm, as an arm, becomes useless. We have no such thing.

238. Taking your standard of 16 years as the period of life of an ordinary Snider-Enfield, would the life of this Martini-Henry rifle be any longer or shorter?—It would be fully equal to it. I should think there would be no reason for apprehending that as an arm it would give way sooner. Supposing the other arm is supposed to die at 16 years, there is no reason why this should die at a shorter period.

239. (*Capt. Majendie.*) Is there any practical difficulty in replacing the spiral spring?—The practical difficulty arises from the instruction which would have to be given to anyone who was allowed to interfere with the lock and the action in removing the block and unscrewing the stop-nut and putting a new spring in.

240. Would that be done by a private soldier?—I think it would not be advisable for him to do so. I do not think you could instruct every man to do it; it is rather a nice operation, getting the arm of the tumbler into the slot and pressing the block home into its place, though apparently easy to one who understands it.

241. There would be no difficulty, would there, in providing a sufficient number of instructed men, whether armourer serjeants, or anyone else in a regiment, to carry that out?—The armourer serjeant is a skilled gunmaker, and it is merely giving him a little additional instruction, as was done in the case of the Snider. I sent a number of instructed viewers all over the world, as far as Japan, Hong Kong, and everywhere, to instruct every armourer serjeant of every regiment in the British service in the Snider, and that would have to be done with this gun.

242. Do you anticipate any difficulty in adjusting the strength of the spiral springs exactly, when made in very large quantities?—No greater difficulty in large quantities than in small.

243. That is to say, you can ensure uniformity?—Yes; the same process of manufacture and the same process of testing would be pursued with large quantities as with small.

244. Do I rightly understand that the remedy of applying a stronger spring has been effectual, as regards the getting over miss-fires?—Yes.

245. And has it had any corresponding disadvantage?—No, not a permanent disadvantage; it had a momentary disadvantage in respect to the arms which were then in the hands of the troops, who received a stronger spring because it gave greater leverage and weight to the tumbler and a little more duty for the trigger to do; but of course, if we had had the guns as well as the springs, we should have adjusted those things.

246. I understand that you do not recommend any strengthening of the safety bolt?—I do not know whether it would be any use, or whether there is any real necessity for strengthening the safety bolt.

247. It has been represented to us by some witnesses that the safety bolt appears to be a rather delicate part of the mechanism, and that it might be perhaps desirable to strengthen it. Is that your opinion?—I do not think so; the safety bolt prevents the action of the rest being moved by the action of the trigger. Of course you can put sufficient power on the trigger to break almost everything. You might increase it, but I think it would be at the expense of some other part.

248. With regard to the dust getting into those guns in store, is there anything exceptional in the necessity for protecting articles in store from dust; are not articles generally protected in store?—Yes; when those articles are like arms of this sort, which require that their action should be kept perfectly free and clean, and capable of being used at a moment's notice, my idea being that a gun in store should be capable of being taken off the rack and put into a box and sent off without the previous labour of stripping it and cleaning it.

249. You do not consider that it amounts to a special objection to a gun that it requires to be protected?—No, it is only that the fact remaining so, some means must be adopted for preventing dust getting in.

250. Are you apprehensive of the effects of dust upon the gun when on service?—I could not answer that question.

251. With regard to the facility and economy of manufacture of those breech actions, do you consider that they could be provided if necessary from high class private manufacturers under proper supervision, as we are doing in the case of the Snider now?—With our system of viewing with gauges, and everything of that sort, the system of manufacture by private tradesmen would follow that of Enfield. All the gauges and standards are furnished by Enfield. The system of viewing would be independent of the private manufacturer, and entirely in my hands; and, therefore, that being the case, the system of the viewing would be identical with that pursued at Enfield; there would be no difference at all, and consequently you might expect the same results to be attainable, irrespective of the quality of the material used, which is a more difficult point.

252. Is there anything in this breech action, which would prevent or interfere with your going to the private trade if necessary?—I think not, though it is just possible that I might prefer or propose to supply the spiral spring from the Government factory. You see I cannot control the material that they use, and although by the test, which is very rigid, one might detect the want of proper quality, a tradesman has to get a profit out of it; the more profit he gets, of course, the better for himself, and that is naturally the first element in the case of a tradesman accepting an order; he has to get so much profit, and that profit may be got by his trying to use inferior material, or material not as good as I think necessary, and that being the case, it throws more difficulty upon the viewing and the inspection to find out those things, and the same amount of viewing and inspection which might satisfy me at Enfield, where I know that the material is good, perhaps would not be sufficient where I had not the control of the first purchase of the material. I think that is a very important matter to understand.

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253. Do you see any mechanical objections to the action for military purposes on any points not comprehended in this programme?—As far as the results of the trials made go, I am not prepared to say that there are any particular mechanical defects likely to affect it for military purposes.

254. (*Capt. Chapman.*) With reference to stripping the breech-action, would the armourer sergeants require any particular or any special tools?—No, it is very simple indeed.

255. In fact, simpler tools than they use now with the Snider?—No, there is nothing but a turnscrew, and a nipple wrench with the Snider. If you had to take the breech-action off the barrel you would want a barrel wrench the same as with the Snider. I can strip the whole of the action with two turnscrews, a small one and a large one, and with the Snider I should do the same thing with one turnscrew and one nipple wrench.

256. Therefore you require no more tools to do it than with the Snider?—I do not.

257. Do not you think that a good many handy men in a company could be taught to take them to pieces and put them back again?—In the army you have so completely ignored all that, that you have taken away from the soldier every implement that he ever possessed; you have taken from the private soldier even the ordinary nipple wrench. He cannot put in a piston or a spring now in the Snider, as his nipple wrench has been taken away from him.

258. That is because they are not properly taught to do it?—You have ignored the capability of the soldier doing it; you have put him aside altogether, and considered that he is not capable of doing it.

259. Supposing you wished to teach a fairly handy man, could you not do so?—Yes, you might send a handy man out of the company and put him into the armourer's shop. You would find many men who would pick up this kind of thing in a short time; at the same time, as a rule, you would consider that the armourer sergeant was the only man, properly speaking, to take the arm to pieces.

260. With regard to the pull-off of the Martini-Henry, do you think that a very light pull-off would be more unsafe than a light pull-off in an ordinary gun?—There would be practically the same result.

261. With reference to the packing of the arms, there would be no more difficulty, I presume, in packing the arms than the Snider?—No; less so in fact. No difficulty at all.

The witness withdrew.

Mr. Thomas Perry examined.

Mr. T. Perry.

262. (*Chairman.*) I believe you have been engaged for many years as a practical gun-maker?—Yes; I have been at the Small Arms Factory for 16 years.

263. Have you had much experience in the manufacture of the Martini breech action?—I have.

264. From what you have seen of the breech action do you consider that the several parts could be made with facility and economy when the machinery is put up for the purpose of manufacture?—I do; there is every facility at Enfield for making the parts, which are of plain simple figures and easy to manufacture.

265. Are there any suggestions that you could make to the committee or any improvements that you would like to bring before them in the arrangement of the action?—No, there is nothing except with regard to the automaton bolt. I think that it would be a decided improvement if that was introduced; it seems to render the action complete and safe.

266. That is not a mechanical question, but it is a question with regard to the safety of the arm?—Just so.

267. Do you approve of the spiral spring?—Yes.

268. Do you consider it equally efficient as a flat spring?—Quite so. It is of strict mechanical order, as its blow is struck in the same direct line as its force is exerted. Some experiments tried by our superintendent with both springs practically proved that the spiral spring strikes a sharper blow than the flat spring in the ordinary side lock. I examined 60 guns returned from the various regiments to the factory out of the 200 which were made, and found the spiral spring in first-rate condition in all of them.

269. You think that there would be no difficulty in securing uniformity of strength in the spiral springs?—No, so long as the wire is maintained in its true diameter throughout its length. There is no difficulty about the maintenance of the proper strength and regularity of the spring if the size and proper quality of material be strictly adhered to.

270. With the present arrangement of the tumbler, sear, and trigger, can the pull-off be regulated in a similar way to the pull-off of any other ordinary gun?—Yes, when made regularly to form and figure as any other gun is made at the factory. When we get them up to a system of gauges of truth, which we should do when we were making them in large numbers by machinery, there would be greater regularity in this particular point than we have been able to arrive at in making the guns by hand; and when that is the case there will be no difficulty, in my mind, about their all being made certain.

271. With regard to mounting and dismounting the breech action, do you consider that a man of ordinary intelligence, say a noncommissioned officer, or even an intelligent soldier, could be instructed in mounting and dismounting the breech-action and lock?—Without doubt; there is no difficulty about it.

272. And supposing anything were to happen to the sergeant-armourer of a regiment, there would be no difficulty in finding soldiers who could easily mount and dismount this action?—None whatever; the parts are very simple of displacement, and of being replaced. It is much easier, for instance, to take out the main spring in this action than it is to take the main spring off a common side lock; you unscrew the stop-nut with a screwdriver and the spring falls out. Whereas in the ordinary main spring of a side-lock you require a proper cramp and some little special care to get it off and put it together.

273. Would special tools be required for mounting and dismounting the Martini action?—Only one, that is a screwdriver for the stop-nut.

274. Supposing that particular form of screwdriver did not exist, what then?—Then you can take it off with a knife.

275. Do you consider the divided stock strong?—Yes, when they are properly fitted. There were four in the guns that were returned that were loose, but upon examination we found that that was owing to their not being properly bedded at the bottom of the socket in the first instance. They bore on the top edge of socket, which is a thin edge, instead of the bed at the bottom. If they are seated properly at the bottom of the socket there will be no fear at all about it.

276. (*Capt. Majendie.*) Would there be any difficulty in ensuring the fit of the stock in the way that it ought to be?—None whatever; this would be done by machinery, there would be no hand fitting about it; when machine-cut, every one would fit.

277. Assuming them to fit in that way accurately, would the stock then in your opinion be as strong as the stock of the present service gun?—Quite.

278. (*Mr. Ross.*) I understand it was you who examined, and took to pieces the breech mechanism of the 65 arms returned from the troops?—Yes, it was.

279. On the whole, were you satisfied with the state in which you found this breech mechanism?—Yes; upon the whole I was, although some of them were returned in a very rusty wretched state.

280. Showing that they had undergone very severe treatment?—Yes; but the actions worked freely even

in the guns in which the body and block were very rusty and dirty. We dismounted the action, and took out the spring, it was covered with oil, the same as it was when it first when in; there was not a symptom of rust upon the spring.

281. Then you discovered no defect in the principle developed by those trials?—None, from what we saw, the action has worked well, and I believe the President himself shot the rusty gun to which I have referred.

282. (*Capt. Chapman.*) Supposing that for any particular purpose, you wanted a very light pull-off with the Martini-Henry, or with the Martini breech action, do you consider that it would be as safe as with an ordinary side lock?—Yes, quite.

283. You consider that it would be quite as safe with a light pull-off as an ordinary side-lock?—Yes, quite. I believe, if made properly, and the tumbler fairly seated on the top of the tumbler rest, it would be impossible for the gun to go off, unless the trigger was pulled. We have raised them some four feet high, and dropped them on the floor to try if we could jar it off by the force of the blow, and when properly fitted we cannot jar them off in that way.

284. (*Mr. Ross.*) Could you safely reduce the pull-off in the case of the Martini?—Yes; by making the angle of the sear nose and the bent in tumbler more obtuse.

285. (*Mr. Gregory.*) Some of those rifles which were sent to Enfield for inspection, had a heavy pull-off and some a light pull-off: there were some as low as 3 lbs., were there not?—Yes, there were.

286. Did you try any of those that had as low a pull-off as 3 lbs., by letting them fall the same as the others?—Yes, and one went off by a blow of about 3 feet high; it jarred off from the force of the blow.

287. What was the cause of its jarring off?—When we took them to pieces we found it was owing to the angle on the top of the tumbler-rest not being of a proper shape; it was sloped off, whereas it ought to be flat.

288. Supposing you wanted to get a light pull-off, would you have done that, or would you have taken something off the trigger?—I would have taken it off the trigger or the bent in the tumbler, and not off the rest.

289. Therefore that rifle exploding by a fall was due not to the structure of the Martini action but entirely to the improper work that had been done to it by some person while it was abroad?—That was the reason.

290. As a mechanic, you are clearly of opinion that such a pull-off as 3 lbs. might be obtained with perfect safety?—Quite so. We have done it ourselves; by having the surface of the tumbler rest, where the tumbler takes its seat, in true radial form, perfect safety is obtained. The pull-off can be varied by making the angle of the sear nose and bent in tumbler more or less obtuse, to give more or less slip as desired, providing the axis hole in the trigger is properly elongated.

291. Any alteration that you make is in the bent in which the trigger works?—Yes.

292. Do you think that any of the parts of the Martini action want strengthening or alteration at all?—The only part that I would suggest would be the strengthening of the stock bolt. The cause of this being as it is was owing to weight. We were restricted to work to a given weight of the rifle, and every portion of it has been required to be kept as light as we could possibly make it, to get it to the weight prescribed. This, in my judgment, ought to be stronger than it is; it should be increased in size to $\frac{1}{2}$ inch diameter.

293. Does the thread stand out larger than the bolt itself?—Yes. The shank of the bolt is $\frac{3}{8}$ diameter, and the top of thread $\frac{7}{16}$ diameter.

294. So that the bolt itself is rather smaller than the thread?—Yes; it is turned down to the size of the bottom of thread, which makes it very light.

295. (*Chairman.*) This is the shape of the new lever handle (*handing the same to the witness*). That handle has been altered in form in order to give the soldier a better grasp for holding the rifle at bayonet exercise. Do you think its adoption would interfere in any way with the working of the action of the gun?—I am afraid it would interfere with the extraction. The hand would have to move through too great a distance. In the old lever, the weight of the lever becomes a fly. By placing your thumb when pressing as near the axis as you can get, the end of the lever travels down very sharply, its weight adding force to jerk out the cartridge. If you follow this down from the back here (*describing the same*) you would not be able to extract it so sharply.

296. (*Mr. Gregory.*) You have seen a great deal of rifles and rifle actions of all sorts, not only of the rifles that have been introduced into the service, but also of various inventions, have you not?—I have. There has been a great variety of actions brought to the Small Arms Factory to be examined at various times, and I have had an opportunity of examining a great variety.

297. With that knowledge and experience, do you think this action is practically good, simple, and efficient, or otherwise?—I think it is the most simple and substantial one that I have ever met with. It was that fact that led us to select it from the nine guns sent to the factory to be inspected and reported upon by our superintendent. The simplicity of this action, the manifest strength of its component parts, and its power in manipulation, pointed it out as being something out of the ordinary run of breech actions.

298. (*Mr. Ross.*) Those were nine guns that were sent to you by the old Committee, were they not?—Yes, they came to the factory to be examined, with regard to facility of manufacture, and to pass a judgment upon their capabilities.

299. (*Mr. Gregory.*) Do you consider that the action would be likely to do its work under different circumstances of climate and otherwise with safety and regularity?—Yes, I do. The 10 rifles returned from Montreal are reported to have worked well though exposed for days when the temperature was 15° below zero; this intense cold broke no springs. The components being all of one material the contraction and expansion will be uniform and regular, ensuring the proper working of the action. Being of ample strength and power in the arrangement it needs no delicacy in use.

300. As to facility or economy of manufacture, would it be inferior to the Snider-Enfield?—In my judgment it would be more economical to manufacture this action than it would the Snider. The under side of the Snider block, for instance, is a complicated figure to cut, being a number of curves and sharp angles. The Martini components have chiefly plain surfaces.

301. So that the opinion which you give of the simplicity and efficiency of the Martini action is not simply judging it by itself, but judging it by a comparison with other actions that have come before you in the course of your business at Enfield?—Yes, it is. My judgment is formed upon the difference between this and others that I have seen.

302. (*Capt. Chapman.*) Is there in this Martini-Henry breech action anything more difficult to make than the tumbler of an ordinary side lock?—There is not a component in it so difficult as the tumbler of the ordinary side lock.

303. So difficult either to make or to adjust?—No.

304. (*Mr. Ross.*) How long would it take to alter the machinery at Enfield to manufacture the Martini-Henry arm?—So as not to cause confusion in the staff of hands at the factory, it would take at least six months to get in working order. The way we propose doing it is to get a certain amount of Snider work in the machines, and as the first operations become finished, apply the new fixtures and fittings for the Martini components, following up the Snider work

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as it becomes finished as closely as possible, making as easy a change from one to the other as practicable.

305. You think it would take six months before the whole machinery at Enfield would be at work in manufacturing the Martini-Henry arm ?—Yes. It might be done sooner by stopping the factory, and commence applying the new fittings and fixtures to the machines at once. But we should lose the staff of hands, and cause much confusion and loss of time in the long run by such a proceeding.

306. Have you any idea of the cost of altering the machinery ?—There are from 1,400 to 1,600 machines; the bulk would require new fixtures for the new pattern components, the plain figures of which would not make it a more expensive alteration than for any other arm, indeed not so expensive.

The witness withdrew.

Adjourned.

War Office, Wednesday, 11th January 1871.

PRESENT:

LIEUTENANT-COLONEL H. C. FLETCHER IN THE CHAIR.

Major HAIG.	Captain AYLMER.
Captain CHAPMAN.	C. H. GREGORY, Esq., C.E.
Captain MAJENDIE.	E. ROSS, Esq.

Lieutenant TUPPER, *Secretary*.

Mr. JAMES DAVIDSON examined.

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307. (*Chairman.*) I believe you have been employed for some years at the Royal Laboratory of the Woolwich Arsenal ?—Yes.

308. Would you be good enough to state what your position there is ?—I am one of the managers under the superintendent, that is to say, I have the direction principally of all the mechanical work done in that establishment.

309. I believe you have had before you a programme for the examination of witnesses on the character of the mechanical construction of the Martini-Henry rifle ?—Yes, I have had the questions forwarded to to me by Captain Majendie.

310. Have you prepared any written statement ?—I have.

311. Will you kindly read it to the Committee ?—Yes.

A.

The working parts of the action of the Martini-Henry breech for rifles, as shown in the Royal Laboratory Lithograph dated September 1869 are in my opinion capable of being produced or manufactured by a system of simple machines and appliances, if properly organized and carried out by divisional labour under competent direction and superintendence. There is nothing in the nature or form of any of the parts to prevent their being produced systematically and correctly to form and dimensions with economy and despatch if required in sufficiently large numbers.

B.

I prefer dealing with this question under the heads of simplicity, efficiency, and durability under the conditions named. First, simplicity. Considering the object aimed at and the measure of success obtained I think the action extremely simple, and I have nothing but well-merited praise to bestow on the evident thought and care which have been given to the construction of the action.

2nd. Efficiency.—My opinion of the general character of the action is favourable, but I consider that the mainspring and the means of actuating the safety-bolt are defective or liable to become so.

3rd. Durability.—I think that extremes of heat or cold and the action of various degrees of humidity in the atmosphere would be liable to have an injurious effect on some of the working parts, and so damage to some extent the regularity of their action.

C.

1. I consider the block, if properly jointed (*i.e.*, no strain being borne by the joint pin), quite sufficient to withstand the explosion of the charge without injury to the joints. From the strength and position of the block when closed I consider the strain would be transmitted through the block to the seat of the block joint.

2. This is a most important point. Whenever we have to depend upon springs for an absolute duty we are trusting to an uncertain and varying medium for storing up and transmitting force, and as far as my experience goes the coiled spring is not the most desirable form of what is at the best an uncertain agent. The defects of the coiled spring are in my opinion twofold—1st, its objectionable form; 2nd, the difficulty involved in manufacturing coiled springs of a uniform and equal character. Still, I must admit that the form in which the spring is applied is very compact and convenient, and by storing up an excess of power may serve the purpose required, and I think that in its present form, combined with its striker, it is in the best possible position for applying the stored-up force in almost a direct line with the axis of the barrel; but the limited space through which the striker moves is doubtless an unfavourable feature.

3. I consider the lever properly placed for the duty it has to perform, and that it has sufficient power for working the block, cocking the rifle, and acting on the extractor with a smart kicking motion, so as to eject a suitably-constructed cartridge from the barrel; and if the rubbing surfaces are perfectly hardened I have no doubt the lever will continue to do its work efficiently.

4. I think the combination of all these parts on the centre pin very good, and I see no reason for doubting their permanent efficiency; but I think the arc through which the indicator travels rather limited.

5. I cannot but admire the ingenuity which has been displayed in the arrangement of these parts, but I am not possessed of sufficient experience in the special points named to give a decided opinion, though I see no difficulty in adjusting the bearing surfaces at first to a given form and dimensions.

6. I think the safety bolt simple, efficient, and likely to be permanent, but I doubt the efficiency of the means of actuating it, as corrosion, dirt, or inferior oil may make the bolt stiff in its action, in which case I fear the lever would be too short to shoot the bolt.

7. I consider the extractor correct in form and well situated for doing its duty when acted upon smartly by the falling block if properly constructed cartridges are used.

8. I think this one of the best arrangements that could possibly be devised, as it protects the whole of the working parts from dirt and injury, as well as being strong and compact in form.

9. I consider this method of stocking very neat, simple, and efficient for all the requirements of a rifle.

D.

The foregoing remarks embody my views generally on the Martini-Henry breech action; I do not believe that any theoretical reasons I could assign would be of any value, and I have had no actual experience in what I have indicated as possible defects or weak points.

In my opinion, two of the trifling defects I have indicated could be improved by a simple alteration of details, but I am not prepared at present to suggest any better arrangement of the main spring than that shown in this combination.

312. (*Chairman.*) The Committee are very much obliged to you for the carefully drawn-up paper that you have put before them, and there are a few questions which I think the Committee would like to ask you upon that paper. I see, under No. 3 B, you state that you think "that extremes of heat or cold and the action of various "degrees of humidity in the atmosphere would be "liable to have an injurious effect on some of the "working parts, and so damage to some extent the "regularity of their action." What parts do you consider would be influenced by the climate?—I think the spring principally. In my opinion it would get oxydised and be seriously affected by the heat and humidity of India for example.

313. Do you think that it would be more likely to be affected than the flat spring?—I think it would be more likely to be affected than the flat or lever spring, as it is generally called.

314. On what grounds do you think so?—There is a greater surface opened and a smaller body to work upon.

315. Do you consider that it would be heat or cold that would affect the working of the springs?—Cold, I believe, principally; extreme cold would, in my opinion, if it were just at the breaking point, tend to snap it.

316. Would it affect its strength or its permanence?—I should say it would be stiffer in extreme cold than in extreme heat, but more liable to break.

317. Would you consider it conclusive as to the durability of the spiral spring in cold climates if the rifles should have been submitted to the severe test of a winter in Canada and exposure there, and if the springs should not have been broken?—That would not change my opinion of the general principle.

318. What effect might the climate of India have upon the spring?—The extreme heat would rather weaken it there, and then the humidity which it would be exposed to would cause oxydisation and corrosion.

319. Are spiral springs used for other purposes than for gunlocks in Canada and in India?—Not that I am aware of.

320. I believe they are used for many other purposes in this country?—My only practical experience of spiral springs is in the application of them to the Salter balance in the safety valve of a steam boiler; likewise to Macnaught's indicator for taking diagrams from steam engines.

321. Are they used for those purposes in Canada and in India?—Spiral springs I have no doubt are used in India for the safety-valves of locomotives.

322. Have you ever heard that they got out of repair when used for those purposes in Canada?—My experience is mostly confined to England, and more especially to the boilers in the department that I am connected with. I replaced them long ago as I could not depend upon them.

323. You use, I suppose, another description of spring?—We use a weighted lever. The spiral springs indicated perhaps a pound out, and gave a false impression of the working of the boiler.

324. (*Mr. Ross.*) So you gave up using springs altogether?—Yes, for the boilers.

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325. (*Chairman.*) Would you prefer for the gunlock the flat springs to spiral springs?—Yes, if I could get as compact an arrangement as in the Martini action.

326. I think you have stated that you consider the arc through which the indicator travels rather limited. Would that have reference to mechanical working or simply to its duties as an indicator?—Simply to its duties as an indicator.

327. I presume that if it were thought desirable there would be no difficulty in making the arc larger?—Not any.

328. I see that you object to the safety bolt. Do you believe that it would get out of order from rust or dirt?—I do not mean to object to the safety bolt, but I do not think that you have any leverage on it. It is not the bolt itself that I object to, but the means of working it.

329. (*Mr. Gregory.*) You do not recall any other use of the spiral spring as familiar to you excepting the use of the Salter balance for a safety valve?—And the indicator.

330. Do you know of its being used for the balance of the chronometer?—I do.

331. Is not that a balance which requires great delicacy, precision and uniformity?—It is.

331. And one which is at work day and night for years?—Yes.

332. Are you aware whether the defect which you think attaches to the spiral spring by its nature is found to show itself in the spiral springs in chronometers?—I prefer answering the question in this way. I look upon the chronometer as being a philosophical instrument, and therefore as being removed entirely from every-day things, such as a gun-lock or machinery for performing any specified duty, and I would simply remark that the spiral spring there has no duty to perform; it merely has to keep in action so many wheels, and has very little actual mechanical duty to perform; and then it is assisted by the fusee, or regulated so as so rectify its varying force.

334. But is not the balance spring the actual regulator of the force?—The fusee simply corrects the irregularity of the main spring, not of the balance spring. The balance spring is that upon the regularity of which depends the actual correctness of the work, is it not?—Yes. I have mistaken you as to the balance spring. I was alluding to the main spring.

335. And, although the amount of power applied to the two springs may be very different, yet are not the laws of nature the same with regard to both of them? If one would be liable to lose its power and to become irregular, would not the other become liable to lose its power and to become irregular?—I can only answer that by stating again that the chronometer is in the category of philosophical instruments, and a nicety and care is bestowed upon it at all times which protects the spiral spring from any hurt or undue pressure.

336. Are you aware of the application of spiral springs to railway buffers?—Yes.

337. Is not that use continued?—Not to my knowledge, generally.

338. Will you forgive me for asking in explanation of that answer whether you mean that you are not aware what the fact is, or that to the best of your belief it is not continued?—To the best of my belief they are going out, and volute springs and plate springs are being introduced in their stead.

339. You think that the volute spring is not open to the same objection?—It is to receive a pressure, and not to deliver a force.

340. Supposing after considerable rough usage and work is applied to the spiral mainspring of a gun, it should be found that the spring retains its power, your objection to the spiral spring might be modified?—I hardly know exactly how to answer that question further than to say that it would be only for that one spring or that lot of springs made from that coil of wire.

341. Supposing it should be found that a number of spiral springs after having been in use and severely tested did not lose their power when applied as the

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mainspring of a gun, would your objection to the spiral spring be modified by uch experience or not?—It certainly would.

342. Another objection which you have to the use of the spiral spring is the shortness of the stroke, as I understand you?—Yes.

343. Why do you object to that short stroke?—Because I believe the best form to fulminate is a smart light blow, not a heavy slow blow.

344. And you think that the spiral spring will give a heavy slow blow?—Yes; it assumes something like pressure. I am fully aware that it is not pressure entirely, but it is more of pressure I think than of percussion.

345. Have you made any experiments upon spiral springs so as to test the character of their force, or is it that as a mechanic you think that would be the result?—As a mechanic I think that would be the result.

346. Supposing that the force of the spiral spring as applied to the Martini action were actually tested and reduced to mathematical calculation, and it were found that as compared, say, with the flat spring of the Snider, the spiral spring of the Martini gave a blow which was statically lighter, but which was more rapid, your objection on that ground to the spiral spring would be materially modified, I presume?—It certainly would if such were the case.

347. You have stated that the liability to rust in the spiral spring arises from the larger amount of surface in proportion to the bulk of the spring?—Yes.

348. Do you remember how in the Martini action the mainspring is protected from atmospheric action by being not only within the case but also within the block?—Yes.

349. Do you think that such protection would to some extent diminish the liability to injury by rust?—Yes, I have no doubt it would, but I am informed by gentlemen who have been in the West Indies that their keys rust in their pockets.

350. I need hardly ask you whether if you were to see a Martini action which had been very roughly handled and greatly exposed to damp, and you found, on opening that action, that while many of the working parts were loaded with rust and the case was rusted over, yet the spiral spring was quite black, you would suppose that there must be something or other about the arrangement which protected that spiral spring very materially?—Yes, I would. Permit me to say that I have seen a large number of the springs and have a very high opinion of them generally, because I have had an opportunity of seeing those rifles often which Captain Majendie, the assistant superintendent, uses.

351. I do not quite understand that answer when compared with your previous ones?—I have a high opinion of them as far as they have gone, but what I am afraid of is that they will not continue the same when made in large numbers.

352. But in what respect is it more difficult to make springs in large numbers than in small ones?—The first difficulty arises in getting uniformity of material.

353. How does that difficulty arise?—The coil of wire from one ingot and the coil of wire from another ingot, may not be the same.

354. And cannot be made the same?—I will not assert that. I can only say, speaking from life, that they often differ.

355. Do you think that there would be considerable difficulty in obtaining a large amount of steel wire for the purpose of making spiral springs which should be uniform in its character?—I do not see why we do not get it, but I only say that we have not obtained it as yet; at any rate we have never had steel wire of uniform character.

356. Do you think that there would be a difficulty in obtaining steel wire of uniform quality to a large extent supposing there were a great demand for it?—I do not think there ought to be—it must depend upon the house or firm which takes it up to manufacture it for you.

357. (*Mr. Ross.*) You consider that the spiral spring is more liable to deterioration from rust than the flat spring?—Yes.

358. I think I understood you to say that the metal case in the Martini-Henry rifle is an efficient protection against rust and dirt?—A protection, but not an efficient protection; it is a very good protection, but not a perfect one.

359. But in face of practical evidence to the contrary, would you modify that opinion. When it is found on examination that after great exposure to wet and rain, the spiral springs are free from rust, would you not modify that opinion?—I would if I saw it, but I can hardly realize such being the case.

360. One of your objections to the spiral spring is that, as you state, its action partakes more of the nature of a pressure than a blow. Assuming that opinion to be correct, if, by practical experience, it is found that the pressure has the effect of igniting the cartridge, I suppose you would consider that sufficiently effective?—Yes.

361. (*Capt. Aylmer.*) If the spiral spring in the Martini-Henry does break, is it not more easily replaced than the flat spring in the common lock?—Yes, it would be more easily replaced.

362. It only requires a turn-screw to remove it and replace it, while the Snider lock requires a cramp or other implement?—Yes.

363. The spiral spring is also a great deal cheaper than the flat spring as used in the Snider, is it not?—I should say it was.

364. (*Capt. Majendie.*) You speak of some of the working parts being liable to be affected by damp and heat and cold, and you name among them the spiral spring; are there any other of the working parts which you think would be liable to be injuriously affected?—I think the sear and trigger; that is a very nice, delicate part.

365. How do you think they would be liable to be affected by heat or cold?—I am speaking more of humidity.

366. Then am I to understand from that, that you do not consider that the sear and trigger would be liable to be affected by heat or cold, but only by humidity?—Only that.

367. Have you known within your experience any examples of spiral springs becoming affected, I mean injuriously affected, by rust, or heat, or cold?—I have known them become defective by working.

368. But have you known instances of their being affected by rust, or heat, or cold?—I have known them to indicate one pressure when very warm, and another when very cold. That was on gauging them with great refinement.

369. How warm or how cold do you mean—something very extreme?—No; about 20 lbs. or 30 lbs. pressure of steam; a temperature of 240 degrees.

370. A temperature of 240 degrees has affected them so as to make them uncertain?—That is to say they were not exactly the same as at a temperature of 70 degrees.

371. But taking the ordinary temperature to which a spring in a gun is exposed, it would be of course very much less than the temperature which you have stated affected these springs?—Yes.

372. Do you think that the same springs which became variable under this increased temperature, would have been variable under a temperature of say 100 degrees or 110 degrees?—I do not think so, unless confined with constant use and work, variable strains being put upon them.

373. That is an example then of a spring affected by very extreme heat?—Combined with constant working.

374. Can you give me an example of a spiral spring affected by extreme cold, or moderate cold?—I cannot bring to my mind exactly now an example further than that I should believe from my knowledge [illegible] material that it would be stiffer when cold th[illegible] hot.

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375. But do you think that within the range of temperature to which gun-locks are exposed, the heat of India and the cold of Canada, the difference of temperatures in those two climates would make a sensible difference in the strength of the spring, or in the action of the spring?—Not with the excess of force which is stored up in it for the duty it has to perform.

376. That is to say, you think that the spring is powerful enough to cover any variations to which it may be subjected?—Yes.

377. Then, practically, you think that the spring is likely to perform its duty in those climates?—Yes, until it is broken.

378. Do you think that it is more likely to break than a flat spring?—I do.

379. Why?—I can only put it thus, that my experience is that such is the case in all applications where I have seen them tried on machines.

380. Your experience having reference chiefly to the use of the spring for boilers, that you were speaking of just now?—No. I have seen them applied to machines, as an adjunct, without having to perform an absolute duty.

381. And have you seen them fail to perform that?—I have.

382. Were those springs made of very good material?—I cannot say that they were made of the very best material that could be got, but they were made of fair commercial steel wire.

383. Have we not got one of Ryder's forging machines in the laboratory?—Yes, two.

384. Are not spiral springs largely used in those?—Yes, but they have been thrown out.

385. What has been thrown out?—I mean that they have frequently broken.

386. But do those forging machines perform their work satisfactorily?—Yes, they do.

387. Have they been in use many years?—Yes, to the best of my recollection, since 1858 or 1859.

388. Have the springs been renewed?—Yes.

389. All the springs in that time?—I could not say that they have all been renewed.

390. But numbers of them have been renewed?—Yes.

391. Do you look upon the spring as a weak part of that forging machine?—I certainly do.

392. You say that the loss of the spiral spring if it becomes rusted is distributed over a large surface, would not the effect of that be to distribute the evil effects of the rust, and to render any particular part of that spring less affected by that?—No, I do not think so.

393. Do you think that the difficulty of getting uniform material for spiral springs is greater than the difficulty of getting flat springs without any flaws?—I do.

394. To go back to this Ryder's forging machine, have you ever suggested, or has it ever been proposed to substitute some other springs for spiral springs in use in it?—It has been proposed for that machine, but not within the department.

395. Could you tell me how long a spring works in one of those machines on an average?—I could not from my memory, just now.

396. But would you consider it very bad if a spring broke in every six months?—No, I should think that it did its duty very well.

397. The machine being in constant use during that time?—Yes.

398. What amount of work would the machine do in six months?—The number of blows per hour is something very great, is it not?—To the best of my recollection it is from 600 to 650 per minute. Allow me to remark that the spring receives no blow until the workman puts the iron between the tools.

399. Still it is doing an amount of mechanical work in [illegible]hine, and sustaining a number of concussions a[illegible]ons?—Yes.

[illegible]n a spring which had worked in that machine for six months in constant work would have done really a very great deal of work?—Undoubtedly.

401. And you think that the springs in that machine would work for six months?—I have known them not work a week, and I have known them work over six months.

402. Are the springs made for that machine with very great care, or are they roughly made?—Roughly made.

403. Could the character of those springs be improved by a system of careful selection?—Yes.

404. Do you consider mechanically that the spiral spring as at present applied to the Martini-Henry is a positively objectionable feature?—No. I do not.

405. Your objection does not go so far as to condemn the spring for that purpose, it merely amounts to a preference for another form of a spring?—As I have already stated, I believe they are always uncertain. I believe the flat or lever springs the least likely to give way, and then comes the spiral spring.

406. With regard to this push which the spiral spring has, you think, a tendency to give, all we want is to fire the cartridge, and do you not know that the spiral spring does fire the cartridge?—Yes, because you bottle up more force into the spring than perhaps would be absolutely necessary if you allowed it to pass through a greater distance.

407. But is there any objection to that mechanically?—Not mechanically.

408. And is it not an advantage in this way, that it makes the parts more compact. Supposing you had a longer stroke, you must have more space to do it in, must you not?—Yes, with the present spiral spring.

409. About the divided stock, do you consider that the present mode of stocking is as strong as that of the Snider, taking into consideration the cutting away of the wood for the lock of the Snider?—I think that is doubtful. I certainly never did exactly compare the two together.

410. (*Major Haig.*) Just now you were speaking of the coiled spring in comparison with the flat spring of an ordinary lock, and you appeared to state that there was more force stored up in the coiled spring than there is in the flat spring; that is, that when under compression, the coiled spring would require a greater weight to keep it in that state than would the flat spring. Did I understand you rightly in that?—Yes.

411. I have understood from experiments that the flat spring requires a pressure of 56 lbs. to keep it in in the state of compression while the coiled spring requires only 40 lbs. Under those circumstances would your objection as regards the velocity of the blow be removed to a certain extent?—No, that does not embody my meaning. If you bottle up a small amount of force and send it through an inch and a half, you ignite the percussion cap, but if you only send that small amount of force through a quarter of an inch, you will not ignite the percussion cap.

412. But you rather put it that the stronger force is being bottled up in the coiled spring?—Yes. Therefore I say you require a smaller amount of force bottled up in the lever spring, seeing that it is generally acting upon the short end of a lever.

413. But if as a matter of fact the flat spring is the stronger spring of the two, then it will not be so, that is to say if the strengths are inversely as you think them?—I should certainly look into it, and see if such was the case, it would depend upon the form of the flat spring.

414. I speak of the ordinary Snider spring?—Yes.

415. You are under the impression that the spiral spring is the stronger spring of the two?—Yes, the stiffer of the two.

416. (*Chairman.*) I think you said that you believe that extreme cold, say that of Canada, would have a deteriorating effect on the spiral spring?—If the spiral spring is just one of the hard set, that is to say, rather hardly tempered, and it came to extreme cold, it would be much more liable to fracture in cold than in ordinary temperature.

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417. And therefore the spiral spring would not answer practically so well in very cold climates as in ordinary climates?—All springs under the same condition would be liable to fracture, but I think the spiral spring more so than the flat.

418. Therefore you consider that there is a practical objection to the use of spiral springs in a very cold climate?—Yes.

419. That would apply not only to spiral springs in a gunlock, but in other appliances exposed to changes of temperature?—Yes.

420. Is it not the case that the ordinary spring-balance for weighing meat in a butcher's shop is made with a spiral spring?—Yes.

421. Is that objected to in the northern part of America or Canada?—I am not aware that they are used there, and of course no one would have their food weighed with a spring; at least I should not care about having it; you cannot depend upon them.

422. You think that no one would use the ordinary spring-balance in America or Canada?—When he did not require very correct weight he might.

423. But I thought your objection was, not that the spring would lose power when exposed to a Canadian climate, but that it would actually break?—It would be more liable to break.

424. Therefore your objection would be equally strong against using the ordinary spring-balance in Canada as the gunlock with the spiral spring?—My objection to the spring-balance altogether is that it is an incorrect instrument.

425. You object to it both in this country and in colder climates also?—Yes.

426. Would you object to it more in colder climates than in this country?—No, only that it is more liable to fracture there.

The witness withdrew.

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M. Frederick von Martini (attended by Mr. Hotze acting as his interpreter) examined.

427. (*Chairman.*) I do not know whether you have had before you the programme for the examination of witnesses on the character of the mechanical construction of the Martini-Henry arm?—Yes.

428. The Committee have examined several witnesses on the points specified in this programme, and they desire to ask you a few questions partly with reference to the evidence that has been taken, and partly with reference to the results of the trials which have been made of the arms during the time that they have been in use by the army. Have you had an opportunity of seeing the rifles that have been used by the army and navy during the last year?—Yes; to-day, at Enfield. The rifles look very well considering the usage they have undergone.

429. Are there any especial points that you would like to mention to the Committee with reference to these arms?—I have not very thoroughly examined the rifles, and I have no observation to make upon them; but if the Committee choose to ask any questions on any point, I shall be very glad to answer them.

430. Are you satisfied with the way in which the spiral springs have done their work in these arms?—Yes, it was from the beginning my firm conviction that there never could be any difficulty about the spiral springs.

431. I believe you have produced an action that has a flat spring and not a spiral spring?—I have only done that at the request of several foreign governments who wished to experiment upon the flat spring in comparison with the spiral spring.

432. Would you inform the Committee which action you prefer, the action with the flat spring or the action with the spiral spring?—I am myself in favour of the spiral spring; it is decidedly cheaper to make, more durable and lighter.

433. Would that answer apply to the spiral spring in comparison with the flat spring, or would it apply to your preference for the whole action, *i.e.* for the first action over the second action?—To both, and to the breech action, because that with the spiral spring is easier and more agreeable to handle.

434. Would you have any objection to tell the Committee to what foreign governments you have submitted your rifles?—By special request to those of Prussia, Russia, Spain, and Portugal; and then, not officially, but unofficially, to most foreign governments, not always myself, but sometimes through other parties.

435. Which action does the Prussian Ordnance Committee prefer, the flat spring or the spiral spring?—The spiral spring, to the best of my knowledge.

436. Have they had both the actions before them?—Yes.

437. After having seen both the actions, viz., that with the flat spring and that with the spiral spring, they prefer the spiral spring?—Yes. From long experience they desire to remain by the spiral spring.

438. That is to say, from long experience in its use in guns?—Yes, in guns. For 25 years past their experience causes them to prefer the spiral spring in principle. So in the Chassepot, the faults of which are certainly not due to the spiral spring. And in the Vetterli repeating rifle which the Swiss government adopted, the former model, which had a flat spring, has been changed into a spiral spring; and the latest official model is a spiral spring instead of a flat spring.

439. When you visited Enfield, did you see an arm very much resembling one that you sent to the Committee with the lever close along the stock?—Yes. That is an exact carrying out of what I sent to the Committee; what I sent at the Committee's request was merely a rough indication of it, their being no time to work it out.

440. Are you satisfied with the extraction of the cartridge when that lever is used?—Yes. The only modification which I wish to have is, that the lever catch-spring should be in the shoe itself instead of in the stock, as I have explained to the manager of the Enfield factory.

441. At which end of the lever. Here (*pointing to it*)?—In the shoe (*describing the place*).

442. What effect would that have?—At the end of the lever it might weaken the stock here (*pointing to it*). If in the shoe everything that pertains to the breech action is compact, and further, three small details are saved by that means.

443. Did you see any cartridge extracted with that lever at Enfield?—No; but I was told that it worked admirably, and from my examination of the mechanism I was satisfied that it must be so.

444. In fact you are perfectly satisfied with that shape of lever, as being equally well adapted for extraction as the other?—Yes, the extraction is exactly the same, only this one has been very rapidly made and is not strong enough; I sent it merely to indicate what I meant.

445. During the trial by regiments it was found that in one or two of the arms which had got very much rusted, this pin (*pointing to it*) was so firmly fixed into the block that it could not be got out. Would there be any objection to using either a screw of a different metal or to using a pin with a keeper screw?—No objection at all.

446. Which do you think would be preferable, using a screw of a different metal, say gun metal, or using a steel pin with a keeper screw?—I think gun metal would be simpler.

447. There would be no objection to having two metals in contact with each other, the gun metal and the metal of the block?—No. I wish to remark that this pin has so little strain upon it, in fact none at all, that any metal almost might do.

448. There have been some opinions ex[illegible] the bolt not being so exact and certain in [illegible]

it should be. Could this bolt be improved in any way as far as you see?—The bolt is perfectly safe.

449. Is the bolt quite strong?—Yes; it might be made a little broader, but I do not see the necessity for that. There is no difficulty in making it broader, but I think that, as it is now, it ought to answer every purpose.

450. It has been stated that the trigger wire should be made stronger, and should be fastened in a somewhat better way, because it has worked loose in some instances. Have you any remark to make on it?—It has never occurred in my experience that it became loose, but if experiments should demonstrate that, there is no practical difficulty in removing the objection.

451. In making it a screw, for instance?—No difficulty in that.

452. Do you consider the attachment of the stock sufficiently strong?—I think that the bolt of the stock ought to be somewhat longer.

453. Would you reduce the size of the head of the stock bolt?—No; if it is made longer it is not necessary to reduce the size of the head of the stock-bolt.

454. Would you prefer that it should be made of some different metal?—I have little practical experience on that particular point, but I consider that if it were made of steel and not hardened that would be the best.

455. Have you any opinion to offer with regard to the mounting of the rifle, namely, the trigger-guard, or the heel-plate, as to whether it should be of steel or brass?—I consider that immaterial; but if it is brass it comes somewhat cheaper, and is not exposed to rust—the rest is a matter of taste.

456. The Committee consider that the sharp edges of all exterior parts should be as much as possible rounded. You would have no objection to that, I presume?—No, on the contrary.

457. Are there any other points which you would like to draw the attention of the committee to now?—No.

458. (*Mr. Gregory.*) Assuming that it should be found, in using the arm with the altered handle which has the loop brought further from the working centre, that the power of extraction at starting is good, but that the rapidity of the extraction at the end is not so great, would there be any simple mode of correcting that defect?—It is not a defect that exists. I consider that it is impossible that it should be found to be so.

459. But if you will consider for a moment the action, your extractor has two different actions—the first portion of its action is a slow but powerful action to start the cartridge from its seat in the chamber—the last action is a less powerful but more rapid action to throw the cartridge case out. Now as far as the powerful portion of that action is concerned, the application of the hand at a longer distance from the working centre, than is afforded by the existing handle, clearly gives you greater power for the first portion of the extraction; but as regards the latter portion of the extraction it seems to me that as clearly, while giving you a greater power, it would give you a diminution of speed?—Yes.

460. Supposing you think that to be a correct view, then assuming it to be found that the velocity given in the latter part of the act of extraction is not sufficient to jerk the cartridge out, would the correction of that defect be simple, and have you considered at all in what way you would correct it?—First of all, I deny that it is possible that it should have any injurious effect of that sort, as could be proved by this rough model of the lever, and, as I showed to some of the gentlemen on the Committee at Woolwich. Should, however, contrary to my opinion, any defect arise, it would suffice to make the extractor-lever somewhat longer.

461. So as to alter the proportions of the bent lever?—Yes, and by that means extend the first action of extraction, which would leave sufficient power to complete the rapid action. I consider that if, contrary to [illegible], there should be found any deficiency such [illegible]d to exist, in that case it would suffice to [illegible] extractor-lever.

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462. You have been speaking just now of the preference expressed by the officers of some foreign governments for the action which is now before this Committee, as compared with another action more recently designed by you, having a flat spring instead of a spiral spring. I should like to understand clearly whether the preference had reference to the action generally, or specially to the spiral spring, as a leading feature?—As the officers of those governments have not told me that, I am unable to answer that question.

463. I thought I understood you to say that officers of foreign governments had expressed their preference?—Only the Prussian officers, and they have only given the general ground that they have preferred the spiral spring because they have known its action for upwards of 20 years.

464. Not the action generally?—I only know that they prefer it for the reason which I have stated. They have said that they preferred it, because it had a spiral spring.

465. And do you yourself as a mechanic very much prefer the spiral spring for the purpose of exploding a cartridge?—As a mechanic I see no reason why I should not prefer it, and I do prefer it. As an engineer, I have made a great many applications of the spiral spring and aways preferred the spiral spring.

466. In what mechanical applications have you used the spiral spring?—In many, for example, in forging-hammers where perhaps in one day 100,000 blows are struck. In steam engines latterly the spiral spring has been almost exclusively used in the packing of slide valves, and in the governors of stationary engines, and in many other machines.

467. (*Mr. Ross.*) It is true, is it not, in the case of the common lever, that as you increase the length of the lever handle, you gain power at the loss of speed?—Theoretically, yes; practically in this case the difference is inappreciable.

468. In fact you admit that there is a loss of speed, but you think that the speed is still sufficient for the purpose?—Yes; there may be theoretically some speed lost, but there is abundance left.

469. Are you acquainted with the French mitrailleur?—Only through drawings.

470. (*Capt. Aylmer.*) It has been suggested that the action of the spiral spring is a pressure not a blow; have you ever carried out any experiments to prove that?—I have made no special experiments with it, but I am convinced that it is a blow and not at all a push; and probably it is a sharper blow than an ordinary spring would give.

471. Do you think that the connexion between the handle of the locking-bolt and its interior part is strong enough?—Practically, I have never known any difficulty arise, but that must be entirely a matter of experience.

472. (*Capt. Majendie.*) Do you consider that the locking-bolt is at all liable to become jammed or set by rust or dirt?—It is possible.

473. But do you consider that that possibility exists to such an extent as to render it desirable to alter the construction or arrangement of the locking bolt?—I have never paid any special attention to the safety bolt, because no practical difficulty has ever come under my notice, and therefore I have no special knowledge of it. I think that the best safety bolt is the indicator. I really could not answer the question from any special knowledge.

474. Would there be any objection to increasing the size of the head of the safety bolt?—No objection.

475. Would that give greater power to get over any sticking which might arise?—Of course; or you might make the safety bolt of gun-metal. I mean the outer part. But the safety bolt not being any essential part of my system, has not received my especial consideration.

476. Do you consider that a spiral spring is liable to be more affected by rust than a flat spring?—I see no reason why it should be.

477. Or by alternations of temperature?—No.

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478. Would there be any difficulty in making the pull-off of the trigger finer, that is to say, less than it is at present?—Not the slightest difficulty.

479. Could you go down to 3 lbs.?—To 1½ lbs. I have made many of 1 lb. in Switzerland.

480. Under those circumstances, supposing the gun fell, would it be as safe as a Snider lock which had only the same amount of pull-off?—I rather think that this would be, if anything, more safe.

481. (*Major Haig.*) Can you suggest any way by which the action could be more readily dismounted or taken to pieces?—I have a mode of accomplishing that, and could show it practically, only I have not brought it with me, not considering it of much importance, but it would make the manufacture a trifle more complicated, so that there is no real gain in it. I would not recommend it. As I have stated, I could suggest a plan by which the dismounting and the remounting would be somewhat easier, and if it is desired I will produce that to the Committee at any time.

482. You consider that the present action is sufficiently easily dismounted as it is at present?—I *think* so, but I never attached much importance to that. It is easier than most actions, and I think it is perfectly easy for a man who has any business to take it to pieces. A soldier could not take the Snider action and lock to pieces as easily as this, and here it is lock and action, and everything together. The flat spring action is easier taken to pieces than this, but it has the disadvantage that the arc described by the lever is so much longer.

483. (*Mr. Ross.*) Do you know whether the power stored in the flat spring of the Snider is greater or less than the power stored in the spiral spring of your rifles?—The power is greater in the Snider, but it is larger than is necessary, and besides it is for an entirely different purpose, inasmuch as in the Snider the hammer has to strike another part first, and does not strike directly upon the cartridge.

The witness withdrew.

Adjourned.

LETTER FROM F. J. BRAMWELL, ESQ., C.E.

37, Great George Street,
Westminster, S.W.,
7th December 1870.

SIR,

I BEG leave to acknowledge the receipt of your favour of the 5th inst., in which you inform me the Small Arms Committee desire to obtain oral evidence from two or three Civil Engineers of standing as to the character of the mechanical construction of the Martini-Henry rifle. You further inform me that the Commissioners have done me the honor of selecting me as one of those Engineers should I be able and willing to examine the rifle and to give them such evidence as a matter of professional business, the remuneration for which has been fixed by the Secretary of State at fifty guineas.

In answer to your letter I have now with regret to say that I am under the necessity of declining to give evidence before the Committee.

This necessity arises from the fact that I have already been consulted (as a friend) by a gun manufacturer, and that thus the Committee would not have in my case, that to which I think they are entitled from the engineers they consult and remunerate, viz., their undivided services.

I am, Sir,
Your obedient Servant,
F. J. BRAMWELL.

To the Secretary,
Small Arms Committee,
Woolwich.

LETTER FROM CAPTAIN F. BEAUMONT, R.E., M.P., TO LIEUT.-COL. FLETCHER, SCOTS FUSILIER GUARDS, PRESIDENT SMALL ARMS COMMITTEE.

My dear Fletcher,

I SHALL be prepared to give evidence on Wednesday, in accordance with the request from your secretary; but I think it right to tell you that I am, to a certain extent, interesting myself in getting up a company to work the Martini-Henry patents. You may consider that this detracts from the value of my evidence; if so, please let me know. I go to town to-morrow, and my address is No. 2, Westminster Chambers, Victoria Street.

Yours very truly,
FRED. BEAUMONT.

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